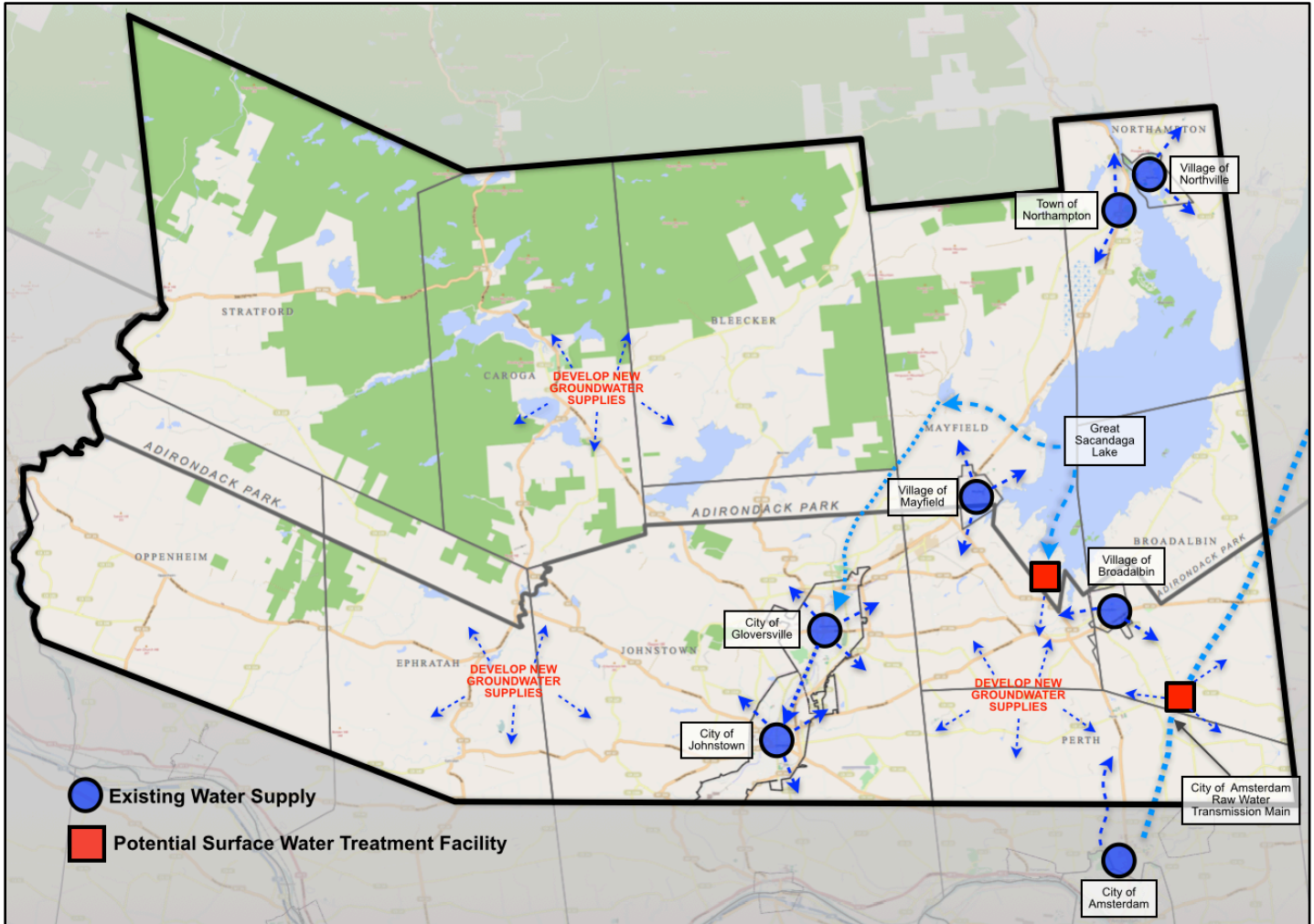


SMART Waters

A Regional Model for Water and Wastewater Services in Fulton County, NY

ENGINEER'S FINDINGS REPORT

APRIL 14, 2014



Prepared By:
Environmental Design Partnership, LLP



Prepared For:
Fulton County Board of Supervisors





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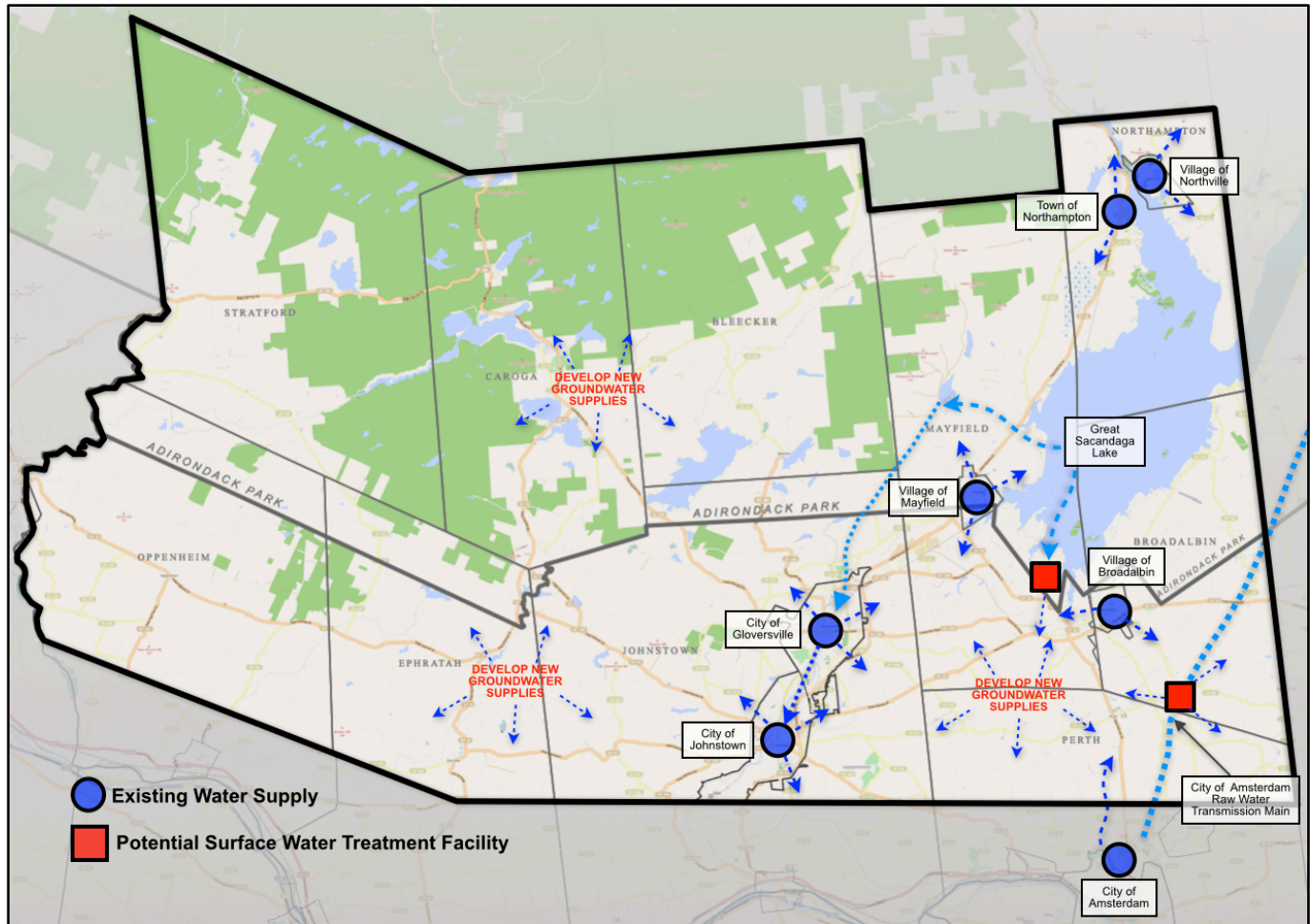
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EXECUTIVE SUMMARY

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BACKGROUND

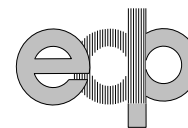
Fulton County is facing difficult fiscal times that challenge local leaders to find ways to increase property and sales tax revenues. Leaders in Fulton County recognize that land development is key to the economic growth within the County. Fulton County is fortunate in that it is strategically positioned to experience land development from potential business, commercial, retail and housing projects due to the technology related business growth in the Saratoga region to the east, Albany region to the south and Utica region to the west. However, the lack of available water and wastewater services is inhibiting land development in those areas of the County where vacant land exists.

In 2013, the Fulton County Board of Supervisors engaged the Environmental Design Partnership (EDP) to evaluate the feasibility for Fulton County to develop a regional water and wastewater system and propose a model for implementing the system. EDP was charged with gathering engineering and economic information for existing water and wastewater service providers in Fulton County; researching existing regional water and wastewater service providers in New York State, identifying water supply and wastewater treatment alternatives in Fulton County, and providing recommendations related to the potential development of regional water and wastewater systems in Fulton County.

EXISTING WATER AND WASTEWATER DELIVERY SYSTEM IN FULTON COUNTY

Six municipal water systems currently operate in Fulton County in the Cities of Gloversville and Johnstown, Villages of Broadalbin, Mayfield and Northville, and the Town of Northampton and four municipal wastewater systems in the Cities of Gloversville and Johnstown, Villages of Broadalbin and Mayfield, and the Town of Northampton. These systems are generally well run providing the residents and businesses of these communities with valuable services at reasonable rates. Some systems, the City of Gloversville water system in particular, have surplus capacities that could be used as an additional revenue source. Other municipalities could benefit from sharing resources with neighboring systems.

EDP received and reviewed a significant amount of information and data from each municipality that currently provides water and wastewater services. This section summarizes EDP's key findings derived from its review of this information and data.



A. WATER SUPPLY

1. The 2012 average daily and peak water use in existing municipal water systems in Fulton County was:

Municipality	Average Daily Use	Peak Daily Use
City of Gloversville	1.830 mgd	2.880 mgd
City of Johnstown	1.720 mgd	3.110 mgd
Village of Broadalbin	0.104 mgd	0.120 mgd
Village of Mayfield	0.092 mgd	0.210 mgd
Village of Northville	0.089 mgd	0.274 mgd
Town of Northampton	0.046 mgd	0.163 mgd
Total:	3.881 mgd	6.757 mgd

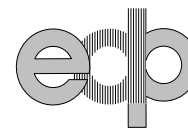
2. Existing municipal water systems in Fulton County use the following sources of water supply:

Municipality	Source of Supply
City of Gloversville	Surface Reservoirs
City of Johnstown	Surface Reservoirs
Village of Broadalbin	Groundwater Wells
Village of Mayfield	Groundwater Wells
Village of Northville	Groundwater Wells
Town of Northampton	Groundwater Wells

3. Based upon the New York State Department of Health and Department of Environmental Conservation's requirements and the Ten State Standards methodologies for determining the capacity of a municipal water supplies, in 2012, there was approximately 3.71 mgd of excess capacity available in the following four (4) municipal water systems that had excess capacity:

Municipality	Excess Water Capacity
City of Gloversville	3.12 mgd
City of Johnstown	0.00 mgd
Village of Broadalbin	0.24 mgd
Village of Mayfield	0.00 mgd
Village of Northville	0.23 mgd
Town of Northampton	0.12 mgd
Total:	3.71 mgd

It is important to note that the excess water system capacity, or lack thereof, is based on a discrete sampling of data points representing historical water usage. Based on our understanding of the historical water usage for each municipality, EDP believes



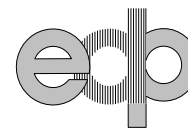
that the water system capacities reported herein are generally representative of each system.

4. There are several locations around the Cities and Villages where municipal services have been extended outside the corporate limits of the Cities and Villages as shown in Figure 1. However, for the most part, services were extended to serve only very specific locations resulting in a number of undesirable dead end water mains.
5. No comprehensive plan exists to extend municipal water services to areas of Fulton County that desire or need this service. The lack of a comprehensive plan could result in the installation of water system infrastructure that is not sized or located appropriately for future growth.
6. The Cities of Gloversville and Johnstown's water distribution systems are physically connected in two (2) locations. From 1980-1985, the City of Gloversville supplied approximately 500,000 gallons per day to the City of Johnstown to help address a water shortage the City of Johnstown was experiencing at that time.
7. The cost of water supplied by Fulton County Water District is very expensive due to:
 - a. The District paying twice the in-City retail rate for the water as opposed to a wholesale rate.
 - b. The restricted number of users connected into the water line.

B. WASTEWATER TREATMENT

1. In 2012, the average daily wastewater flows into existing municipal wastewater treatment systems were:

Wastewater Treatment Facility	Average Daily Flow
Gloversville Johnstown Joint Wastewater Treatment Facility (GJJWTF)	5.200 mgd
Village of Broadalbin	0.085 mgd
Village of Mayfield	0.055 mgd
Town of Northampton	0.050 mgd
Total:	5.390 mgd



2. In 2012, there was approximately 8.737 mgd of excess flow capacity available in the four (4) municipal wastewater systems:

Wastewater Facility	Excess Flow Capacity	Excess BOD Capacity	Excess SS Capacity	Excess TKN Capacity
GJJWTF	8.600 mgd	22,215 lb/day	9,833 lb/day	7,995 lb/day
Village of Broadalbin	0.060 mgd	-- ¹	-- ¹	-- ¹
Village of Mayfield	0.070 mgd	-- ¹	-- ¹	-- ¹
Town of Northampton	0.007 mgd	-- ¹	-- ¹	-- ¹
Total	8.737 mgd	22,215 lb/day	9,833 lb/day	7,995 lb/day

1. Data not available.

3. In 2012, the combined excess wastewater flow capacity (8.737 mgd) exceeded the combined excess water system capacity (3.71 mgd) in the Fulton County municipalities providing these services.
4. No comprehensive plan exists to extend municipal wastewater services to areas of Fulton County that desire or need this service. As shown in Figure 1, some wastewater system infrastructure is located outside the Cities of Gloversville and Johnstown; however, without a comprehensive plan infrastructure may be installed which is inadequately sized and or positioned for future growth.
5. The Cities of Gloversville and Johnstown jointly own and operate a regional wastewater treatment system:
- Each City owns, operates and maintains the wastewater collection system in their City.
 - The Cities jointly own the GJJWTF.
 - The GJJWTF is operated and managed by the Joint Sewer Board.
6. The GJJWTF is a regional wastewater system.
7. The GJJWTF operates under the terms of a Joint Sewer Contract dated May 1964 that has been amended over a dozen times making the Agreement difficult to read, follow and comprehend.
8. Section 13 of the 1964 Joint Sewer Contract has reportedly been a source of contention between the two (2) Cities. This Section includes a requirement that both Cities must approve the extension of new wastewater lines outside of either system. It is EDP's understanding that there has been discussion about changing this requirement so that the decision whether to extend a wastewater line can be made by the Joint Sewer Board and have it based on capacity at the GJJWTF.



9. FMCC owns and operates a wastewater treatment plant that services FMCC, HFM-BOCES and student housing.

EXISTING REGIONAL WATER AND WASTEWATER SYSTEMS IN NEW YORK STATE

Regional water and wastewater systems are common across New York State. Regional systems provide advantages in terms of the ability to extend water and wastewater services outside existing municipalities and share resources between communities. Some communities now served by a regional system faced similar challenges to those expressed within Fulton County in terms of protecting individual resources and potential loss of local control. These communities were able to overcome their differences and work through the issues to develop water and/or wastewater systems that now benefit the entire region.

EDP investigated a number of existing regional systems in New York State. Based upon this research, EDP determined that:

- A. There are numerous regional water and wastewater systems currently operating in New York State.
- B. Regional water and wastewater systems were created to:
 1. Promote land development.
 2. Promote SMART Growth.
 3. Address specific water and wastewater issues in a region.
- C. There are two (2) administrative structures used in regional water and wastewater systems:
 1. Systems administered by County government.
 2. Systems administered by a County Authority.
- D. The administrative structure selected for a particular regional system was determined to be best for that system.
- E. Counties that chose the administrative structure using a County Authority were able to successfully create the Authority.
- F. There are a variety of operational structures used in regional systems including operating a system through the use of coordinated Inter-municipal Agreements.
- G. Regional water systems typically purchase water at wholesale rates from existing water supply sources.
- H. Regional water systems often purchase water and wastewater capacities from other municipalities both within and outside their County.
- I. Some regional systems provide services throughout a County while others provide services in only a portion of a County.



- J. Regardless of the administrative structure used by a regional water and wastewater system, special districts or zones of assessment must be created to define geographic limits of the service provided.
- K. The use of groundwater wells as a source of municipal water supply is widespread. Groundwater is used both as a single source of supply and in combination with surface supplies.

Based upon the research conducted, EDP believes a regional water and wastewater system can be successfully implemented by Fulton County. EDP believes a regional system can provide economic benefits for the Region by promoting land development.

RECOMMENDED MODEL FOR A REGIONAL WATER AND WASTEWATER SYSTEM IN FULTON COUNTY

The recommended model for a regional water and wastewater system has two (2) structural components:

A. Administrative Structure:

There are two separate and distinct administrative structures for a regional water and/or wastewater system:

1. Develop a regional system under the existing County government.
2. Develop a regional system by creating a new County Authority.

Other communities across the State have demonstrated that both of these administrative structures provide the ability to successfully deliver water and wastewater services in the regions in which they operate.

For each of these structures, there are options in terms of working with existing municipal water and wastewater systems and the extent to which a new regional system is developed.

EDP recommends the model that Fulton County develop a regional water and wastewater system under the existing structure of the Board of Supervisors. Advancing a regional water and wastewater system under the umbrella of existing County government may increase the size of County government. However, this would be an expected outcome resulting from providing a new municipal service. This structure would afford the County with flexibility in



working with existing municipalities to provide services and maximize administration and operation and maintenance efficiencies.

B. Operational Structure:

The operational structure of a regional system can vary significantly in terms of the extent to which a regional service provider is involved in developing, operating, and maintaining water and wastewater system capacities and distribution / collection system infrastructure. A regional service provider may choose to develop its own water supply and wastewater treatment capabilities and system infrastructure or rely on cooperation, through inter-municipal agreements, with other municipalities for the provision of these services.

Since it is not known, at present, where water and wastewater capacities will be developed, which existing water and wastewater service providers will participate in a regional system, or where infrastructure will be installed, EDP does not, at this time, offer any specific recommendations on the model's operational structure. As the answers to these unknowns are established, the operational structure will be developed.

POTENTIAL SOURCES OF WATER AND WASTEWATER CAPACITIES FOR A REGIONAL WATER AND WASTEWATER SYSTEM IN FULTON COUNTY

EDP recommends Fulton County's first step in developing a regional water and wastewater system be to obtain water supply and wastewater treatment capacities. Fulton County's options for obtaining these capacities are summarized below. These options are illustrated conceptually in Figures 2 and 3 located at the end of the Executive Summary.

A. Water Supply:

1. Existing Municipal Water Systems within Fulton County
 - a. Purchase excess system capacity
 - b. Purchase all or a portion of the existing system
 - c. Lease all or a portion of the existing system
2. City of Amsterdam
 - a. Purchase raw water
 - b. Purchase finish water
3. Develop New Groundwater Supplies
 - a. Existing Tryon Facility
 - b. Explore other locations in Fulton County
4. Develop the Great Sacandaga Lake as a New Surface Water Supply
 - a. Construct a new water treatment facility
 - b. Utilize the existing City of Gloversville water treatment facility

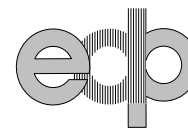
**B. Wastewater Treatment:**

1. Existing Municipal Wastewater Systems within Fulton County
 - a. Purchase excess system capacity
 - b. Purchase all or a portion of an existing system
 - c. Lease all or a portion of an existing system
2. Convey wastewater to the City of Amsterdam for treatment
3. New Wastewater Treatment Facilities
4. Fulton Montgomery Community College Wastewater Treatment Plant

Fulton County should fully evaluate all options starting with negotiating with existing municipalities that provide these services within Fulton County. EDP has learned from its research into how other regional systems were developed in New York State that, in order to purchase/lease excess capacities from municipalities, the arrangement must be a “win-win” situation for both the municipality and Fulton County. It must address each party’s needs and financially benefit both the municipality and Fulton County.

As future water supply and wastewater treatment capacities are considered, Fulton County must work to secure wholesale supply and treatment rates. Wholesale supply and treatment rates are common among municipalities participating in a regional system. EDP’s research determined that charging wholesale rates to a regional system is feasible as the supplier of excess capacity typically experiences minimal additional cost with increased production, does not assume additional distribution system infrastructure operation and maintenance cost and does not assume additional administrative costs associated with new users.

EDP believes opportunities exist for existing municipal systems in Fulton County to financially benefit by selling, at wholesale rates, water and wastewater services to a regional water and wastewater system. The revenues to be generated will be a "win" for local municipalities.



EDP identified the following wholesale rates among the regional systems it researched for this Report:

Regional System and Wholesale Source	Cost per 1000 gal	Percentage of Wholesale Supply	Weighted Average
Genesee County Regional Water System			
City of Batavia	\$2.10	58%	\$2.47
Monroe County Water Authority	\$2.12	23%	
Erie County Water Authority	\$4.00	19%	
Wilton Water & Sewer Authority			
Saratoga County Water Authority	\$2.10	100%	\$2.10
Wayne County Water & Sewer Authority			
Monroe County Water Authority	\$1.92	37%	\$2.05
Village of Newark	\$1.69	14%	
Other Sources	\$2.25	49%	
Renselaer County Water & Sewer Authority			
City of Troy	\$1.86	100%	\$1.86
Fulton County Water District #1			
City of Johnstown	\$6.76	100%	\$6.76

Fulton County has an Agreement in place to purchase water from the City of Johnstown for Fulton County Water District #1. The City of Johnstown sells water to the County at 2 times its retail rate which totals \$6.76 per 1000 gallons. As shown in the preceding table, this rate is nearly three times higher than typical wholesale rates found in regional water systems researched for this Report. As a result of selling water at 2 times its retail rate compared to a wholesale rate, the cost to purchase water in Fulton County Water District #1 is very high. EDP found that the rate charged to customers in Fulton County Water District #1 to be one of, if not, the highest rates found during research for this Report. This high retail rate precludes the practical extension of water service to additional users because of the expensive cost of water.

Regardless of where Fulton County ultimately secures water supply and/or wastewater treatment, prior to the installation of any infrastructure there are a series, of administrative, legal, and engineering tasks that must first be completed. EDP believes that, developing a regional system using the recommended administrative structure, Fulton County could initiate this work (i.e., negotiations with existing municipalities, initial administrative, legal, and engineering tasks) without going through the potentially long, costly, and uncertain, in terms of approval, process of forming a new County Authority.

One of the most important factors in successfully developing a regional system will be the ability to identify the needs of individual communities and establish a structure and system that benefits the communities involved. Each alternative offers significant flexibility in terms of working with existing communities; the success of a regional system will depend less on the



structure chosen and more on the ability to work within the structure to satisfy the needs of the community or communities.

EDP RECOMMENDATIONS

Based upon its assessment of the existing water and wastewater delivery system in Fulton County, its investigation and research of existing regional water and wastewater systems in New York State and the need for economic growth in Fulton County, EDP recommends the following. See Section 6 of this Report for a detailed narrative of the recommendations.

A. General Recommendations for a Regional Model:

1. Fulton County should pursue the model of developing a regional water and wastewater system using the existing Board of Supervisors' structure for administering and managing the system.
2. Fulton County should utilize County Special Districts to identify areas receiving water and wastewater services from the Regional System.
3. Fulton County should engage an engineering firm to prepare a SMART Infrastructure Growth Plan that identifies where future water and wastewater services should be provided in Fulton County and establishes basic infrastructure needs.
4. Fulton County should recognize that it does not appear to be economically feasible to extend water and wastewater infrastructure throughout Fulton County.
5. Fulton County should establish infrastructure funding mechanisms and establish County policies related to infrastructure improvements.
6. Fulton County should establish policies and standards for future water and wastewater infrastructure development.
7. Fulton County should apply for State and federal funding to implement water and wastewater infrastructure projects for regional systems.

B. Specific Regional Water System Recommendations:

1. Fulton County should commence immediate discussions with existing municipalities regarding:
 - a. Their willingness to provide water capacities to a regional water system.
 - b. Their concerns and needs regarding their municipal water system.
 - c. Establishing wholesale rates for water capacities provided to a regional system.
2. Fulton County should develop multiple sources of water supply to promote and service future land development. Potential sources include:
 - a. Excess capacities from existing municipal water supply systems within Fulton County.
 - b. New groundwater sources.



- c. Excess water capacity from the City of Amsterdam.
- d. Developing the Great Sacandaga Lake as a new surface supply.
- 3. Fulton County should engage an engineering firm to:
 - a. Evaluate the potential for developing groundwater wells at Tryon.
 - b. Evaluate the potential for developing groundwater wells outside the Tryon Facility in southeastern Fulton County.
 - c. Evaluate the feasibility and cost of developing the Great Sacandaga Lake as a new surface supply for a regional water system.
- 4. Fulton County should encourage and assist the City of Johnstown in securing additional water capacity by either:
 - a. Acquiring capacity from the City of Gloversville.
 - b. Securing additional surface reservoir capacity.
 - c. Developing new groundwater sources.
- 5. Fulton County should approach the City of Johnstown to discuss modifying the existing water supply agreement to reduce the rate at which water is purchased for Fulton County Water District No. 1.

C. Specific Regional Wastewater System Recommendations:

- 1. Fulton County should commence immediate discussions with the Cities of Gloversville and Johnstown and the Joint Sewer Board regarding:
 - a. The Cities and Joint Sewer Board's willingness to provide wastewater capacity at the Gloversville Johnstown Joint Wastewater Treatment Facility to a regional wastewater system.
 - b. Their concerns and needs regarding their wastewater collection and treatment systems.
- 2. Fulton County should commence immediate discussions with the Village of Broadalbin, Village of Mayfield and Town of Northampton regarding:
 - a. Their willingness to provide wastewater capacity to a regional wastewater system.
 - b. Their concerns and needs regarding their wastewater systems.
 - c. Their willingness for Fulton County to conduct an engineering evaluation of their wastewater treatment facilities to determine the feasibility for expanding existing facilities.
- 3. Fulton County should develop multiple sources of wastewater treatment capacity to promote future land development including:
 - a. Acquiring excess treatment capacity from the Gloversville Johnstown Joint Wastewater Treatment Facility.
 - b. Acquiring excess treatment capacities from the Village of Broadalbin, Village of Mayfield and Town of Northampton.
 - c. Acquiring excess treatment capacity from the City of Amsterdam.
 - d. Developing packaged wastewater treatment plants at strategic locations.



- e. Developing a full wastewater treatment plant at a strategic location.
- 4. Fulton County should engage an engineering firm to:
 - a. Evaluate the feasibility of expanding existing wastewater treatment plants in the Villages of Broadalbin and Mayfield and Town of Northampton.
 - b. Evaluate the feasibility of developing a wastewater collection system along the NYS Route 30 corridor from the Fulton / Montgomery County line north to Vails Mills.
 - c. Evaluate the feasibility of developing new full or packaged wastewater treatment facilities at strategic locations for service to a regional wastewater system.

IMPLEMENTATION STRATEGY

The implementation of a regional water and wastewater system will involve a number of steps and decision points. The following procedural steps and recommendations are necessary for Fulton County to initiate the process of creating a regional system:

1. Board of Supervisors endorses EDP's Findings Report.
2. Board of Supervisors endorses the development of a regional water and wastewater system under the administrative structure of the existing Board of Supervisors.
3. Board of Supervisors begins the process of obtaining water and wastewater capacities by:
 - a. Meeting with Cities of Gloversville and Johnstown to determine their willingness to provide excess water capacities to the County's regional water system and charge wholesale rates.
 - b. Meeting with Cities of Gloversville and Johnstown and Joint Sewer Board to determine their willingness to provide excess wastewater capacity at the Gloversville-Johnstown Joint Wastewater Treatment Plant and charge wholesale rates.
 - c. Meet with other municipalities in Fulton County that own and operate water and wastewater systems to determine their willingness to provide water and wastewater capacities to the County's regional water and wastewater system and charge wholesale rates.
 - d. Meet with City of Amsterdam to discuss obtaining water and wastewater capacities for the County's regional water and wastewater system.
 - e. Engage an engineering firm to:
 - Evaluate the potential for developing a groundwater supply at Tryon Technology Park and Incubator Center.
 - Evaluate areas in Fulton County that could produce high yield groundwater supplies for the County's regional water system.
 - f. Engage an engineering firm to prepare the engineering report needed for Fulton County to pursue the acquisition of water capacity from the Great Sacandaga Lake.
4. Prepare a SMART Growth Infrastructure Plan:
 - a. Identify areas of Fulton County to be serviced by water and wastewater service based upon sources of water and wastewater capacities.



- b. Estimate cost of providing services to these areas.
- c. Prepare SMART Growth Plan.

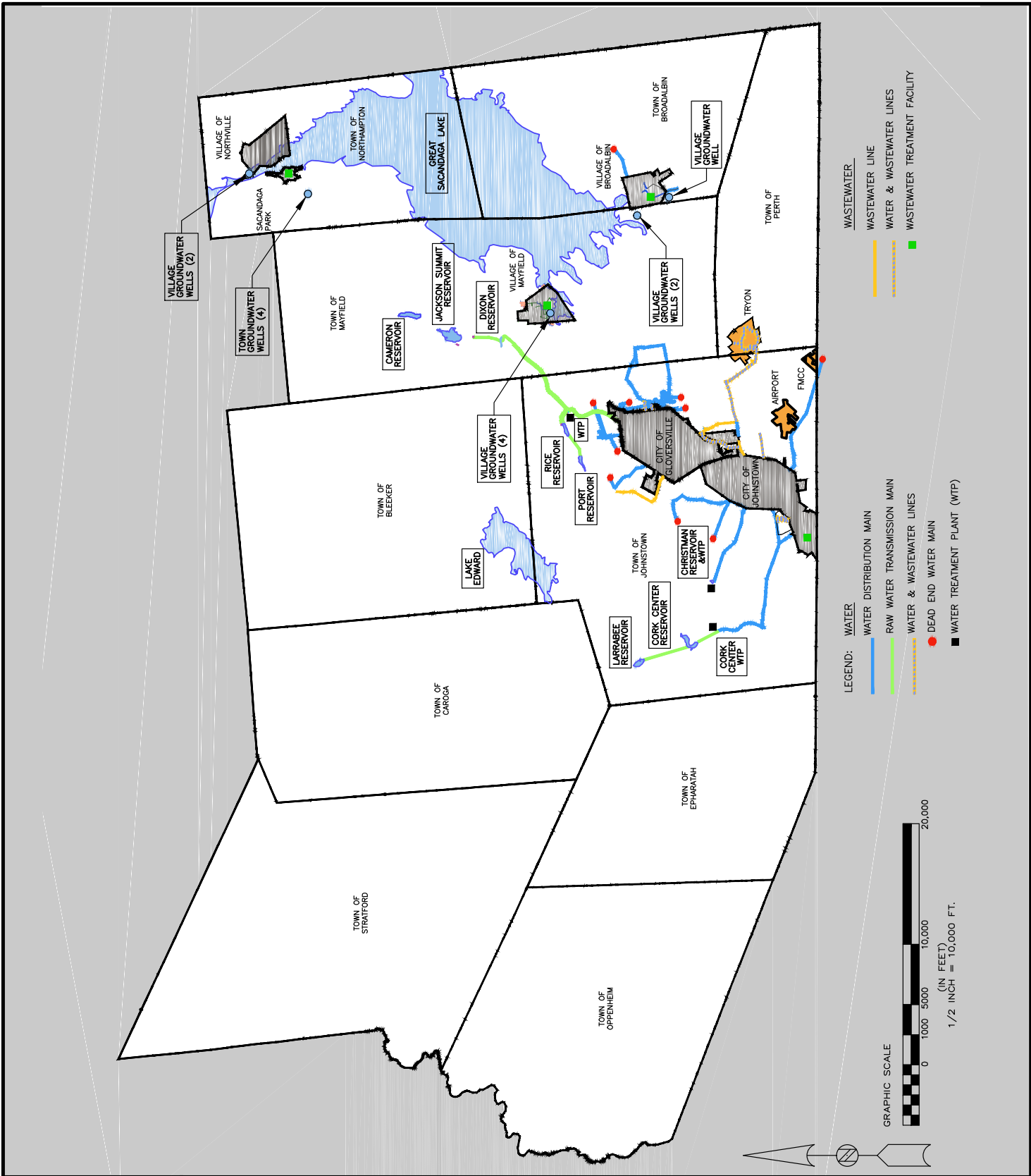
In conclusion, EDP believes it is feasible for Fulton County to establish a regional water and wastewater system. The feasibility of establishing and developing a regional water and wastewater system depends on three factors:

1. Commitment
2. Engineering
3. Financing

The Fulton County Board of Supervisors needs to make a long-term commitment to develop and implement a regional system. Other Counties across the state have demonstrated that, with a long-term commitment, obstacles can be overcome and a "win-win" situation for communities can be achieved.

In terms of engineering, Fulton County is fortunate to have several viable options available for securing existing water and wastewater capacities and/or establishing new sources of supply or treatment. As negotiations with existing municipal suppliers progress and the available options become clear a SMART Growth Infrastructure plan will be established.

In terms of financing, Fulton County Board of Supervisors should understand that it will not be feasible to extend water and wastewater infrastructure throughout the County. The areas in Fulton County that water and wastewater infrastructure can feasibly and cost effectively be provided to will be identified once sources of water and wastewater capacities have been identified and a Smart Growth Infrastructure Plan is developed. However, as demonstrated in other communities, when water and wastewater services are made available to vacant land, the opportunity for land development is enhanced. The timing and extent to which a regional system is developed will depend upon a number of factors including the availability of water supply and wastewater treatment, available financing and the progression of land development.



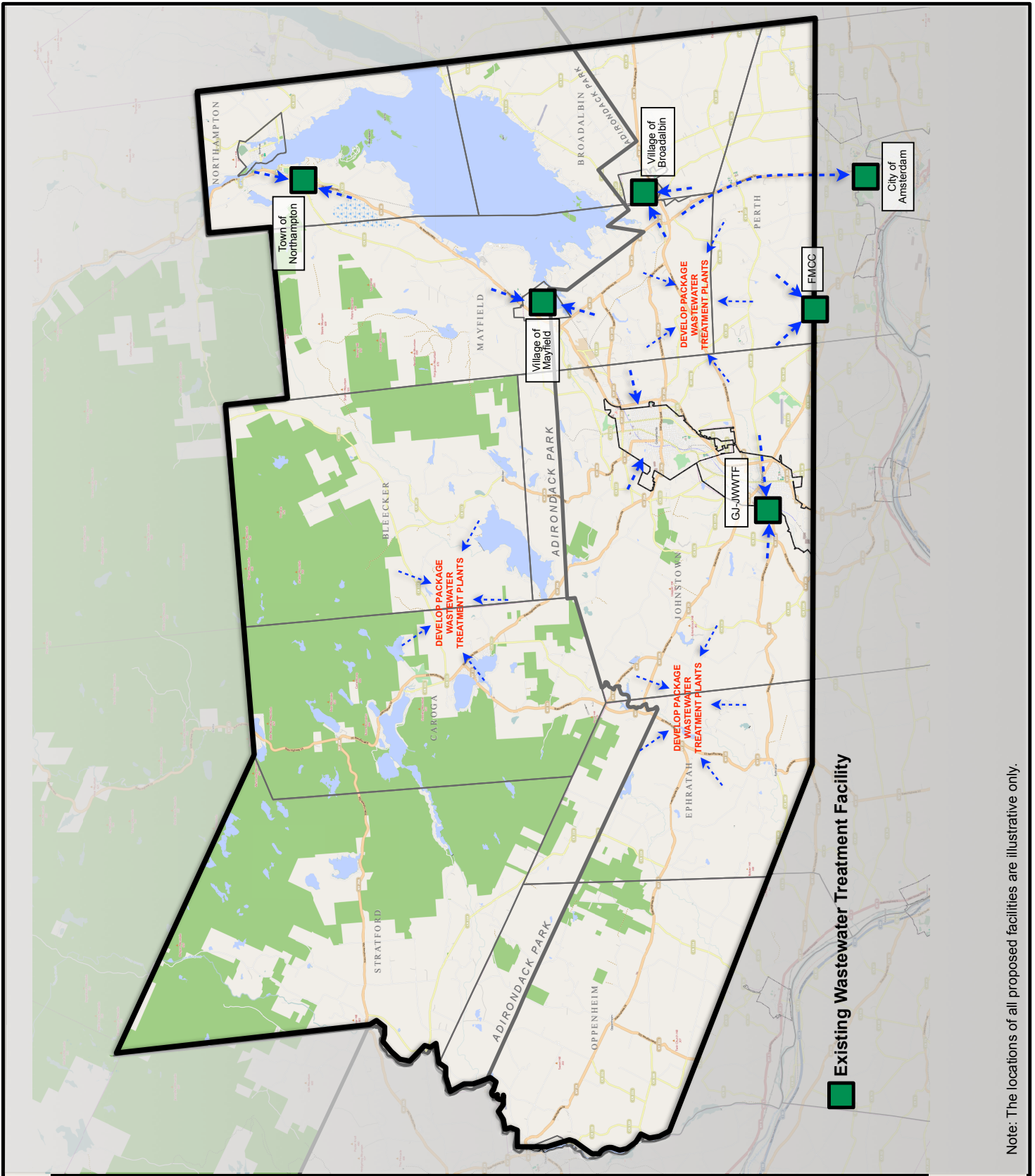
EXISTING WATER & WASTEWATER INFRASTRUCTURE OF FULTON COUNTY

SMART Waters: A Regional Model for Water and Wastewater Services in Fulton County, NY

Source: Fulton County Planning Department

NOT TO SCALE

FIGURE:
1



Note: The locations of all proposed facilities are illustrative only.



POTENTIAL WASTEWATER TREATMENT OPTIONS FOR FULTON COUNTY

SMART Waters: A Regional Model for Water and Wastewater Services in Fulton County, NY

Basemap Source: OpenStreetMap

NOT TO SCALE

FIGURE:
3



1. INTRODUCTION

Over the past several years, Fulton County government has trimmed its budget by reducing the size of county government and controlling expenses. County officials believe it needs to find new ways to grow its property and sales tax revenue to improve the quality of life for residents in the Region. Fulton County officials believe that the key to economic growth is, in large part, through new land development. New land development, however, is currently inhibited by a lack of water and wastewater services outside the municipalities currently providing these services.

Other communities in New York State have faced similar challenges and have successfully addressed them through a cooperative, regional approach to providing water and wastewater services. In 2013, the Fulton County Board of Supervisors engaged the Environmental Design Partnership (EDP) to evaluate the feasibility for Fulton County to develop a regional water and/or wastewater system and propose a model for implementing the system. EDP has gathered gathering engineering and economic information for existing water and wastewater service providers in Fulton County; researched existing regional water and wastewater service providers in New York State, and identified water supply and wastewater treatment alternatives in Fulton County,

This Report will show that regional systems have demonstrated, in other counties across the State, the ability to efficiently deliver water and wastewater services and promote land development. With the availability of water and wastewater infrastructure, new land development is often spurred in areas that otherwise would have remained undeveloped; communities must be prepared for new development and implement sound planning tools to ensure responsible, sustainable development.

1.1 SMART Growth Concepts

Fulton County's SMART Waters hypothesis is that a regional approach to delivering water and wastewater services could provide benefits over the current approach in which these services are provided by individual municipalities operating independently and isolated from each other. Fulton County's SMART Waters initiative shares similar principles with the broader concept of SMART Growth. SMART Growth is a planning concept in New York State that identifies and promotes specific areas within a community for development so as not to encourage sprawl.

SMART Growth concepts are implemented through local zoning regulations. The Fulton County Town's of Johnstown, Mayfield, and Perth have recently updated their zoning regulations to encourage SMART growth principles. As Fulton County considers development of regional water and wastewater systems, the SMART growth plans for individual towns should be



collectively evaluated to ensure consistency between long term development goals of individual communities, the region as a whole, and future water and wastewater infrastructure.

1.2 Surface Water Supply Capacity Requirements

EDP's Report includes a detailed discussion of the current demands and available capacities of existing municipal water systems in Fulton County. In the context of this discussion, it is important to understand the basis for evaluating existing system demands and available capacities. EDP's evaluation of this data was based on requirements of the New York State Department of Environmental Conservation (NYSDEC) with specific criteria to be evaluated depending on the type of supply (i.e., surface water or groundwater supply).

The NYSDEC requires municipal water systems to be able to supply the peak daily demand of the system. As the term implies, the peak daily demand is the maximum volume of water supplied within a system over a 24-hour period. In comparison, the average daily demand is the average volume of water supplied on a daily basis over a 365-day period. The peak daily demand typically occurs during the summer months and can be on the order of twice the average daily demand of the system. Although the average daily demand may be considerably lower, the NYSDEC requires that the peak daily demand be used to identify the capacity of a municipal water supply.

When evaluating the available capacity of a surface water supply system, there are two primary considerations: (1) the capacity of the actual surface water supply and (2) the capacity of the treatment facility. In New York State, water supply systems must meet the requirements of the "Recommended Standards for Water Works by the Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers" commonly referred to as the Ten State Standards. The Ten State Standards requires that the quantity of water at the source, commonly referred to as the "reservoir safe yield", be adequate to meet the maximum projected water demand of the service area as determined by calculations based on a one in fifty year drought or other extreme drought of record, and should include consideration of multiple year droughts. These calculations must be performed at the time the water supply system is permitted by the NYSDEC.

NYSDEC requires the use of peak daily demand and the Ten State Standards require the use of reservoir safe yield in determining the capacity of a water system. As a result, EDP used these two (2) required parameters in determining the capacities of existing municipal water systems.

The capacity of a water treatment facility refers to the ability to adequately treat (i.e., achieve required water quality standards) the raw water. The capacity of a water treatment facility is often characterized by two numbers: (1) the design capacity and (2) the permitted capacity. The design capacity is the capacity that the treatment facility was designed to treat; however, often times the permitted capacity is lower due to some type of system limitation. The



permitted capacity is the critically limiting capacity in terms of the treatment capacity recognized by the NYSDEC. A system with a design capacity higher than the permitted capacity typically indicates that with some level of achievable facility improvements the treatment facility could be permitted for a higher capacity. Any increase in permitted capacity must be reviewed by the NYSDEC.

There are certainly other raw water piping and distribution system considerations; however, in terms of critically limiting factors the capacities of surface supply and treatment systems are most important.

1.3 Groundwater Supply Capacity Requirements

As discussed in the previous Section, the New York State Department of Environmental Conservation (NYSDEC) requires that water systems are able to supply the peak daily demand of the system. Although the average daily demand may be considerably lower, the NYSDEC requires that the peak daily demand be used to evaluate system capacities.

When evaluating the available capacity of a groundwater supply system, the capacity of the groundwater aquifer and ability to pump the groundwater are the two primary supply capacity considerations. The Ten State Standards requires that the total developed groundwater source capacity, unless otherwise specified by the reviewing authority, shall equal or exceed the design of the maximum day demand with the largest producing well out of service; this is referred to as the Safe Yield of the system. A system's safe yield is established at the time the water supply system is permitted by the NYSDEC and re-evaluated as additional groundwater wells are introduced within the system.

1.4 Special Districts

An important concept referenced throughout this Report is the use of districts or Special Districts with respect to the provision of water and wastewater services. In general terms, the provision of services by local government such as water, wastewater, garbage collection, street lighting, etc., requires a geographic boundary to be established defining the area within which the particular service is provided and providing the ability to charge properties within the area for the services. In the case of Cities and Villages, water and wastewater services are typically provided within the entire municipal boundary of the City or Village and the "district" is the municipal boundary of the City or Village.

In New York State, when these services (i.e., water, wastewater, garbage collection, etc.) are provided at the Town or County level of government, a Special District, also commonly referred to as a Special Improvement District or simply a water or sewer district, is required. A Special District is necessary to define the geographic area receiving the service and provide the ability



to charge properties within the district to finance the service. A Special District in and of itself is not a structure for administering and managing a regional water and wastewater system.

It is not uncommon for a Town or County to establish multiple Special Districts. Special Districts can be created at various levels; at the Town level, Special Districts can be created to cover an entire Town or a portion of a Town. At the County level, Special Districts can be created to cover the entire County, an entire Town or portions of a Town or multiple Towns. Special Districts typically do not cross between Counties.

The creation of a Special District provides the ability to charge properties in the District. There are three (3) charges typically levied in Special Districts:

1. Ad Valorem Tax: A tax levied on properties in the District to pay for debt incurred to finance a project in a District.
2. Use Fee: A fee charged to properties for the amount of service provided.
3. O&M Fee: A fee charged to pay for the Operation and Maintenance (O & M) costs of the District.

Individual Special District costs are paid from these ad valorem taxes and fees levied against the properties within the district; however, the district itself does not have taxation or debt issuance power. Debt issued to finance projects in a District would be a general obligation of the local government (i.e., Fulton County in this case) and subject to applicable debt limits. There is occasionally a misconception that the Special District itself owns the infrastructure within and/or serving the district. This is not the case as the governing body (i.e., town or county) owns the infrastructure.

In accordance with New York State Public Authorities Law, an Authority must also establish a district within which it is authorized by the New York State Legislature to provide services. Unlike Special Districts at the Town or County level, the district established by an Authority does not indicate that the Authority is actually providing service within the district. Regional or County Authorities often establish their district as the entire bounds of the County giving them the ability to provide service anywhere in the County.

An Authority maintains a single district whereas a Town or County may have multiple Special Districts used to identify service areas and differentiate assessments or charges to properties. An Authority may establish multiple zones or services areas which would be similar to a Town or County Special District for the purposes of providing services and receiving charges for services in a specific geographic area.



1.5 Zones of Assessment

As noted in the previous section, Town and County governments identify service areas through the use of Special Districts; Authorities also identify a "district" within which they are authorized to provide services. In either case (i.e., Town or County Special District's or an Authorities "district") Zones of Assessment may be established to differentiate specific areas within a District. Zones of Assessment are used to identify areas within a District where costs are allocated differently than the rest of the District. An example of this could be a specific area or "zone" where infrastructure costs may be higher than the rest of the District and the more expensive infrastructure only benefits properties within that specific zone.

1.6 Prior Initiatives Related to Regional Water and Wastewater Systems

The origins of Fulton County's current interest in developing a regional water and wastewater system dates back to the 1990's. At that time, the Fulton County Planning Board proposed to develop a County Comprehensive Plan. The Board conducted a survey to obtain input on what topics should be included in this Plan. The public input received overwhelmingly emphasized the County's economy and job creation as the public's primary concerns.

In response to that input, the Board of Supervisors sponsored an Economic Summit to discuss the economic future of Fulton County. The key outcome of that Summit was that a new Economic Development Strategy was needed. As a follow-up to that Summit, an Economic Development Strategy was prepared. (See Appendix C) The Strategy identified several impediments to economic growth in Fulton County including the lack of municipal water and sewer services beyond the existing service areas of the two (2) Cities. The Strategy contained two (2) recommendations that are directly related to the current "SMART Waters" initiative:

1. A Countywide water and sewer plan should be prepared and implemented to:
 - a. Promote growth
 - b. Expand the tax base
 - c. Lower costs
2. A feasibility study should be conducted on creating a Countywide Water/Sewer Authority.

Several years later, Fulton County hired:

1. Sear Brown Engineers to conduct an engineering investigation to determine where existing municipal water and sewer services could reasonably be extended to in Fulton County.



2. Hiscock & Barclay Law Firm to prepare a model agreement on extending municipal water and sewer services beyond the corporate limits of the Cities of Gloversville and Johnstown.

Sear Brown completed its Engineering Report in 2002. (See Appendix D) Some of this Report's key findings and recommendations were:

Sear Brown's Findings:

- The Cities of Gloversville and Johnstown water systems have the greatest ability for expansion and interconnection to encourage economic development throughout the County.
- Although limited in-filling and re-development is available within the Cities, the greatest opportunity for economic development exists in the Towns surrounding the two (2) Cities.
- Water/wastewater planning and management in Fulton County needs to be improved. There is a need within Fulton County for a cooperative effort to meet future water/wastewater needs.
- Fulton County needs to recognize and promote the tremendous asset it has with its abundant supply of filtered water and available wastewater capacity.

Sear Brown's Recommendations:

- The Fulton County Board of Supervisors should consider the creation of County water and sewer districts to help expedite the extension of municipal water and sewer services into areas outside of the Cities of Gloversville and Johnstown. A County water district would serve as a customer and purchase water from either City's water system. The creation of County districts represents the best option for managing the extension of city water and sewer services to the surrounding Towns that desire these services.
- The Fulton County Board of Supervisors should consider the formation of a County Sewer and Water Agency. The Agency would be a special assignment responsibility for the Board of Supervisors. Agency members would consist of municipality representatives that act in an advisory capacity to the Board of Supervisors relative to water and sewer infrastructure needs. The Agency could employ such engineering, legal and professional assistance for proper resource planning. The Agency would not take away the powers or duties of local water and sewer boards. The Agency would conduct, with local assistance, planning/engineering studies for regional water/wastewater improvements and make recommendations to the Board of Supervisors.

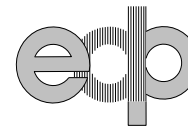


Hiscock & Barclay prepared written legal opinions on the following questions (See Appendix C):

Question	Hiscock & Barclay's Legal Opinion
1. Can the Cities of Johnstown and Gloversville enter into an Agreement with a Town/Village and other municipalities located within Fulton County to extend water and sewer services into a Town?	1. There are various options that would permit the Cities of Johnstown and Gloversville to enter into an Inter-municipal Agreement with a Town or Village to extend water and sewer services into their jurisdictions.
2. Can a Master Agreement be created between the Cities of Johnstown and Gloversville and other municipalities located within Fulton County to establish prescribed rates, terms and conditions for all future extensions of water and sewer services by said Cities?	2. There are various options that would permit the establishment of one or more Master Agreements.

This work Fulton County completed in the early 2000's served as the foundation for pursuing the current "SMART Waters" initiative.





2. EXISTING APPROACH TO WATER AND WASTEWATER SERVICE IN FULTON COUNTY

Fulton County includes two cities (Gloversville and Johnstown), four villages (Broadalbin, Dolgeville, Mayfield and Northville) and ten towns (Bleecker, Broadalbin, Caroga, Ephratah, Johnstown, Mayfield, Northampton, Oppenheim, Perth and Stratford). Water and/or wastewater services within the County are generally available within a select number of individual municipalities with very limited inter-municipal cooperation. The Cities of Gloversville and Johnstown and the Villages of Broadalbin and Mayfield provide both water and wastewater services. The Village of Northville provides just water service. The Town of Northampton provides both water and wastewater services to the Sacandaga Park area.

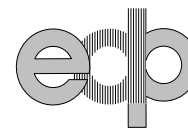
Key information was gathered from each municipality currently providing water and/or wastewater services within the County. EDP interviewed appropriate administrators and/or operators representing each of the municipalities and interpreted the data provided. Upon interpreting the data, EDP requested verification of critical information from each of the municipalities. Verification of the data was received from the City of Gloversville, the Village of Broadalbin, the Village of Northville, the Village of Mayfield, and the Town of Northampton; the City of Johnstown provided a copy of the data previously offered.

The information presented herein was obtained from various sources including Freedom of Information Law requests of individual municipalities, prior reports on file with Fulton County, various publically available sources, the New York State Department of Health and the New York State Department of Environmental Conservation, and through interviews with municipal officials. Information was collected relative to infrastructure and engineering, financial, and legal aspects of the individual systems.

Financial information for each municipality, unless otherwise noted, was obtained from the Office of the State Comptroller through the Open Book New York website. Water and wastewater system revenue and expenses were reviewed for the years of 2012, 2007 and 2002 as presented herein.

The water and/or wastewater rate structure between municipalities both in Fulton County and in other municipalities across the state varies considerably. In order to provide a consistent means of comparing rates among municipalities, it is necessary to assume a specific volume of water consumption and/or wastewater hydraulic loading. For the purposes of this report EDP compared the annual cost for a typical residential household.

The water usage and/or wastewater hydraulic loading for a typical residential household was estimated based on a usage of 100 gallons per day per capita (Wastewater Ten State Standards). The average number of persons per household within the six municipalities with



water and/or wastewater facilities in Fulton County is 2.42 based on 2010 Census data (Table 2-1). Applying a hydraulic loading of 100 gallons per day per capita yields a typical usage of 242 gallons per day for a residential connection in Fulton County. Based on this methodology, for the purposes of comparing rates between municipalities, annual water and wastewater charges were calculated based on a typical residential usage of 242 gallons per day.

Table 2-1: Average Household Size in Fulton County

Municipality	Average Persons per Household ¹
City of Groversville	2.40
City of Johnstown	2.30
Village of Broadalbin	2.54
Village of Mayfield	2.59
Village of Northville	2.30
Town of Northampton	2.37
Average:	2.42

1. 2010 Census Data.

SUMMARY OF FINDINGS:

EDP received and reviewed a significant amount of information and data from each municipality that currently provides water and wastewater services. This section summarizes EDP's key findings derived from its review of this information and data.

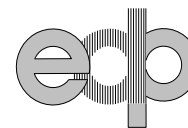
A. Water

1. The 2012 average daily and peak water use in existing municipal water systems in Fulton County was:

Municipality	Average Daily Use	Peak Daily Use
City of Groversville	1.830 mgd	2.880 mgd
City of Johnstown	1.720 mgd	3.110 mgd
Village of Broadalbin	0.104 mgd	0.120 mgd
Village of Mayfield	0.092 mgd	0.210 mgd
Village of Northville	0.089 mgd	0.274 mgd
Town of Northampton	0.046 mgd	0.163 mgd
Total:	3.881 mgd	6.757 mgd

2. Existing municipal water systems in Fulton County use the following sources of water supply:

Municipality	Source of Supply
City of Groversville	Surface Reservoirs
City of Johnstown	Surface Reservoirs
Village of Broadalbin	Groundwater Wells
Village of Mayfield	Groundwater Wells
Village of Northville	Groundwater Wells
Town of Northampton	Groundwater Wells



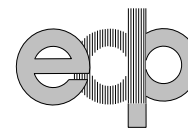
3. Based upon NYSDEC's and the Ten State Standards methodologies for determining the capacity of a municipal water supplies, in 2012, there was approximately 3.71 mgd of excess capacity available in the following four (4) municipal water systems that had excess capacity:

Municipality	Excess Water Capacity
City of Gloversville	3.12 mgd
City of Johnstown	0.00 mgd
Village of Broadalbin	0.24 mgd
Village of Mayfield	0.00 mgd
Village of Northville	0.23 mgd
Town of Northampton	0.12 mgd
Total:	3.71 mgd

It is important to note that the excess water system capacity, or lack thereof, is based on a discrete sampling of data points representing historical water usage. Based on our understanding of the historical water usage for each municipality, EDP believes that the water system capacities reported herein are generally representative of each system.

4. There are several locations around the Cities and Villages where municipal services have been extended outside the corporate limits of the Cities and Villages as shown in Figure 1. However, for the most part, services were extended to serve only very specific locations resulting in a number of undesirable dead end water mains.
5. No comprehensive plan exists to extend municipal water services to areas of Fulton County that desire or need this service. The lack of a comprehensive plan could result in the installation of water system infrastructure that is not sized or located appropriately for future growth.
6. In 2012, the revenues, expenditures and net revenues generated by existing municipal water systems were:

Municipality	2012 Revenues	2012 Expenditures	Net Revenue
City of Gloversville	\$2,555,377	\$2,229,056	\$326,321
City of Johnstown	\$1,643,550	\$1,728,047	(\$84,497)
Village of Broadalbin	\$ 88,490	\$ 71,378	\$17,112
Village of Mayfield	\$ 68,009	\$ 57,134	\$10,875
Village of Northville	\$ 130,207	\$ 94,374	\$35,833
Town of Northampton	\$ 109,161	\$ 109,161	\$0
Total:	\$4,594,794	\$4,289,150	\$305,644



7. The Cities of Gloversville and Johnstown's water distribution systems are physically connected in two (2) locations. From 1980-1985, the City of Gloversville supplied approximately 500,000 gallons per day to the City of Johnstown to help address a water shortage the City of Johnstown was experiencing at that time.
8. There are several locations around the Cities and Villages where municipal services have been extended outside the corporate limits of the Cities and Villages. However, for the most part, services were extended to serve only a very specific location resulting in a number of dead end water mains.
9. The cost of water supplied by Fulton County Water District is very expensive due to:
 - a. The District paying twice the in-City retail rate for the water as opposed to a wholesale rate.
 - b. The restricted number of users connected into the water line.

B. Wastewater

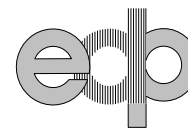
1. In 2012, the average daily wastewater flows into existing municipal wastewater treatment systems were:

Wastewater Treatment Facility	Average Daily Flow
Gloversville Johnstown Joint Wastewater Treatment Facility (GJJWTF)	5.200 mgd
Village of Broadalbin	0.085 mgd
Village of Mayfield	0.055 mgd
Town of Northampton	0.050 mgd
Total:	5.390 mgd

2. In 2012, there was approximately 8.737 mgd of excess flow capacity available in the four (4) municipal wastewater systems:

Wastewater Facility	Excess Flow Capacity	Excess BOD Capacity	Excess SS Capacity	Excess TKN Capacity
GJJWTF	8.600 mgd	22,215 lb/day	9,833 lb/day	7,995 lb/day
Village of Broadalbin	0.060 mgd	--	--	--
Village of Mayfield	0.070 mgd	--	--	--
Town of Northampton	0.007 mgd	--	--	--
Total:	8.737 mgd	22,215 lb/day	9,833 lb/day	7,995 lb/day

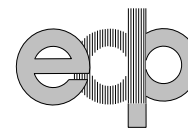
3. In 2012, the combined excess wastewater treatment flow capacity (8.737 mgd) exceeded the combined excess water system capacity (3.71 mgd) in the Fulton County municipalities providing these services.



4. No comprehensive plan exists to extend municipal wastewater services to areas of Fulton County that desire or need this service. As shown in Figure 1, some wastewater system infrastructure is located outside the Cities of Gloversville and Johnstown; however, without a comprehensive plan infrastructure may be installed which is inadequately sized and or positioned for future growth.
5. The Cities of Gloversville and Johnstown jointly own and operate a regional wastewater treatment system:
 - Each City owns, operates and maintains the wastewater collection systems in their City.
 - The Cities jointly own the GJJWTF.
 - The GJJWTF is operated and managed by the Joint Sewer Board.
6. The GJJWTF is a regional wastewater system.
7. In 2012, the revenues, expenditures and net revenues generated by existing municipal wastewater systems were:

Municipality	2012 Revenues	2012 Expenditures	Net Revenue
City of Gloversville	\$1,983,079	\$2,276,775	(\$293,696.00)
City of Johnstown	\$2,030,074	\$3,609,281	(\$1,579,207.00)
Village of Broadalbin	\$ 326,529	\$ 276,092	\$50,437.00
Village of Mayfield	\$ 250,091	\$ 262,647	(\$12,556.00)
Town of Northampton	\$ 112,887	\$ 67,462	\$45,425.00
Total:	\$4,702,660.00	\$6,492,257.00	(\$1,789,597.00)

8. The GJJWTF operates under the terms of a Joint Sewer Contract dated May 1964 that has been amended over a dozen times making the Agreement difficult to read, follow and comprehend.
9. Section 13 of the 1964 Joint Sewer Contract has reportedly been a source of contention between the two (2) Cities. This Section includes a requirement that both Cities must approve the extension of new wastewater lines outside of either system. It is EDP's understanding that there has been discussion about changing this requirement so that the decision whether to extend a wastewater line be made by the Joint Sewer Board and have it based on capacity at the GJJWTF.
10. FMCC owns and operates a wastewater treatment plant that services FMCC, HFM-BOCES and student housing.



COSTS:

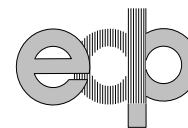
1. Based on a single-family residence using 242 gallons of water per day, the comparative 2012 annual costs for water and wastewater service in Fulton County municipal systems were:

Municipality	Annual Cost		Total Cost
	Water	Wastewater	
City of Gloversville	\$ 349.69	\$315.37	\$665.06
City of Johnstown	\$ 294.67	\$262.23	\$556.90
Village of Broadalbin	\$ 234.86	\$536.83	\$771.69
Village of Mayfield	\$ 214.15	\$489.26	\$703.41
Village of Northville	\$ 241.49	--	--
Town of Northampton	\$ 343.16	\$468.60	\$811.76
Fulton County Water District No. 1	\$1,159.63	--	\$1,159.63 ¹ --

¹Total cost for water only.

2. The true and actual cost of operating and maintaining existing municipal water and wastewater systems could not be determined because:
 - All costs incurred to operate and maintain systems are not separately accounted for. For example, some municipalities have their DPW Departments work on the water and/or wastewater systems. When that occurs, the time spent and costs incurred by those workers are typically not allocated to the water and/or wastewater system. Their hours/costs are allocated to the DPW Department. This includes direct labor costs as well as indirect costs like health insurance and retirement.
 - In addition, many municipalities do not charge their water and wastewater systems for truck and equipment rentals.

The next sections of the Report include key information regarding all existing municipal water and wastewater systems in Fulton County.



2.1 City of Gloversville

Key Facts

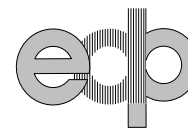
2010 Population: 15,665		Land Area: 5.1 sq. mi.	
Services Provided			
Water		Wastewater Collection (City DPW Service)	
Population Served: 15,500 +/-		Population Served: 15,500 +/-	
Source(s) of water: 5 surface reservoirs		Infrastructure: gravity collection system; 4 primary pump stations	
Reservoir Safe Yield: 6.0 mgd		Annual Cost Per Family ² : \$82.66	
Treatment Capacity: 8.0 mgd ¹		Wastewater Treatment (GJJWTF)	
Average Daily Demand: 1.83 mgd		Population Served: 25,000 +/-	
Peak Daily Demand: 2.88 mgd		Design Capacity: 13.8 mgd	
Surplus Supply: 3.12 mgd		Average Daily Flow: 5.2 mgd	
Surplus Treatment: 5.12 mgd ¹		Wet Weather Flow: 30 mgd	
Annual Cost Per Family ² : \$349.69		Surplus Capacity: 8.6 mgd	
		Annual Cost Per Family ² : \$232.71	
Organizational Structure:	5 member board of elected water commissioners	Organizational Structure (GJJWTF):	6 member Joint Sewer Board, 3 member appointed by each city
Staffing:	17 full time and 10 seasonal employees	Staffing (GJJWTF):	25 full time employees
2012 Water Board Budget:	Expenses = \$2,229,056; Revenue = \$2,555,377	2012 GJJWTF Annual Budget:	\$4.5 million

1. The water treatment facility currently can treat 8 mgd. However, it has been designed for 12 mgd and can reportedly achieve this capacity with internal piping upgrades.
2. Annual cost based on single family residence using 242 gpd

2.1.1 Background Information

The City of Gloversville, located in central Fulton County, covers an area of approximately 5.1 square miles with a population of 15,665 as reported in the 2010 census. The City was incorporated in 1890 and developed with a focus on manufacturing as a leading supplier of leather and gloves through the late 1800's and early 1900's. As the leather and glove industries began to decline, population in the City has also declined. Population in the City reached a peak of 23,634 in 1950; in 2000 the population was 15,413 or a 35% decrease over 50 years.

With a decline in population and manufacturing business the City of Gloversville is left with a water system that significantly exceeds its current needs.



2.1.2 Water System

Information cited within this section was obtained from the office of the City Attorney and the Gloversville Board of Water Commissioners in response to a Freedom of Information Law Request unless otherwise noted.

The Gloversville Board of Water Commissioners (GBWC) is authorized to administer and operate the City water system. The GBWC is an elected board consisting of 5 members. The water system currently provides service to the population of Gloversville through approximately 6,200 service connections (2012 Annual Drinking Water Quality Report).

According to the GBWC, water for the City of Gloversville is obtained from five surface water reservoirs located north of the City. These five (5) existing reservoirs provide an estimated reservoir safe yield of 6.0 mgd. The existing water treatment facility can treat 8.0 mgd of water but has a treatment capacity of 12 mgd; internal piping upgrades are reportedly necessary to increase the Plant's capacity to 12 mgd.

The City currently maintains approximately 2.5 million gallons of finish water storage with a 2.3 million gallon clear well located adjacent to the water treatment facility and a 200,000 gallon elevated storage tank located on Route 29A. The distribution system infrastructure within the City includes approximately 95 miles of cast iron and ductile iron pipe ranging in size from 4 inch to 20 inches. In addition to the distribution system infrastructure within City limits, the GBWC serves areas within the neighboring Towns outside City limits. Figure 2-1 provides an illustration of key features of the City of Gloversville's water system.

The GBWC reports a current staff that includes 17 full time and 10 part time (summer) employees. The 17 full time employees include a Water Superintendent, 13 operation and maintenance personnel, and 3 administrative positions.

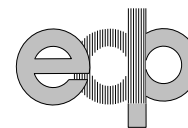
2.1.2.1 Capacity Information

The average daily water demand in 2012 was reported 1.83 mgd with a peak daily demand of 2.88 mgd. Water consumption within the City has been declining in recent years likely due to a declining population and usage by manufacturing businesses. Data reviewed for the purposes of this study showed a range in the average daily demand between 2.35 mgd in 2003 and 1.83 mgd in 2012. With a permitted reservoir safe yield of 6.0 mgd and permitted treatment capacity of 12 mgd (with piping

Table 2-2: City of Gloversville Water System Capacity / Demand Summary (2012)

Supply Type	Surface Water
# Reservoirs:	5
Treatment Type	Rapid Sand Filters
Service Connections	6,200
Average Daily Demand	1.83 mgd
Peak Daily Demand	2.88 mgd
Reservoir Safe Yield	6.0 mgd
Treatment Capacity	8.0 mgd ¹
Surplus Supply Capacity	3.12 mgd
Surplus Treatment Capacity	5.12 mgd (9.12 mgd with upgrades)¹

1. The water treatment facility is rated for 12 mgd; however, current piping limits capacity to 8 mgd.



upgrades) at a peak daily demand of 2.88 mgd for 2012, the City of Gloversville water system has surplus capacity of 3.12 mgd (52% surplus) in terms of reservoir supply and 5.12 (44% surplus) in terms of treatment capacity.

It should be noted that while the permitted treatment capacity of the system is 12 mgd, piping limitations within the treatment system limit the production capacity to 8 mgd at this time.

2.1.2.2 Rate and Financial Information

As previously noted, for the purposes of comparing rates between municipalities, annual water charges were calculated within each municipality on the basis of a typical family using 100 gallons per day per capita for a total of 242 gallons per day.

At a usage of 242 gallons per day the annual service charge for a typical residential user would be \$349.69. This includes a minimum charge of \$32.74 per quarter for the first 8,146 gallons plus \$3.00 per 748 gallons for the balance in usage above the minimum each quarter. For an outside user, using the same 242 gallons per day, the annual service charge is more than double at \$903.38. This includes a minimum charge of \$89.14 per quarter for the first 8,146 gallons plus \$7.50 per 748 gallons for the balance in usage above the minimum each quarter.

The Office of the State Comptroller – Open Book New York website indicates that the City of Gloversville reported total water system related revenues of \$2.56 million dollars, \$2.43 million dollars and \$1.71 million dollars for the years 2012, 2007, and 2002 respectively. Total expenses for the same years were reported as \$2.25 million dollars, \$2.09 million dollars, and \$2.15 million dollars. Table 2-3 presents financial information for the City of Gloversville Water System:

Table 2-3: City of Gloversville Water System Rate and Financial Summary

	2012	2007	2002
Population (2010 and 2000 census)	15,665	15,413	15,413
Water Consumption (million gallons)	636.2	765.6	823.7
Annual Charge (typical family) ¹	\$349.69	\$323.81	\$247.05
"Outside User" Annual Charge ¹	\$903.38	--	--
Total Revenue	\$2,555,377	\$2,426,399	\$1,714,351
Revenue from Water Sales	\$2,217,530	\$2,408,501	\$1,706,907
Total Expenses	\$2,229,056	\$2,086,088	\$2,147,477
Net Revenue or (Expense)	\$326,321	\$340,311	(\$433,126)

1. Annual charges calculated based on typical residential usage of 242 gallons per day

As noted earlier, the City of Gloversville has experienced a decline in population and in manufacturing business resulting in a reduction of water consumption. Between 2003 and 2012, the yearly water consumption in the City dropped by nearly 23% from 823.7 million gallons in 2003 to 636.2 million gallons in 2012. However, despite a reduction in water



consumption, the cost to operate the system increased. Overall system expenditures increased by 4.9% from 2002 to 2012. The primary revenue is water sales. During the period from 2002 to 2012, even though water consumption dropped by approximately 23%, revenues from water sales increased by 30% from \$1,706,907 in 2002 to \$2,217,530 in 2012. **The annual cost for a typical family increased by nearly 42% from \$247.05 in 2002 to \$349.69 in 2012.**

The City of Gloversville reported current water system debt of \$499,071 from a 20 year loan taken in 1999 and due to mature in 2019. The total amount borrowed in 1999 was \$942,000 and used to fund water system improvements.

2.1.2.3 Relevant Legal Documents / Contracts

The City of Gloversville supplies water to limited areas within the neighboring Town of Johnstown. An agreement between the Gloversville Board of Water Commissioners (GBWC) and the Town of Johnstown, executed July 19, 1982, outlines the provisions by which the GBWC agreed to supply water to the Town of Johnstown. A copy of this agreement is included within Appendix A.

The City of Gloversville did, for several years, in the early 1980's supply water to the City of Johnstown. From 1980 to 1985 Gloversville supplied approximately 0.5 mgd of water to Johnstown to help deal with a water supply shortage they were experiencing at the time. A copy of that agreement is included within Appendix A.

2.1.3 Wastewater System

Operation and maintenance of the City's wastewater collection system is provided by the City's Department of Public Works. The City's wastewater collection system flows to a trunk line and treatment facility owned and operated by the Sewer Board.

The majority of the City of Gloversville is serviced via a gravity wastewater collection system consisting primarily of 8 inch sewers. The City's gravity collection system flows into a trunk line installed along the former FJ&G Railroad bed parallel with the Cayadutta Creek. Flows are monitored in the trunk line where the line leaves the City of Gloversville and enters the City of Johnstown.

The wastewater collection system includes 5,065 service connections within the City of Gloversville.

2.1.3.1 Rate and Financial Information

The City collects a sewer maintenance fee of \$0.60 per 100 CF for industrial users and \$0.70 per 100 CF for residential users. The fee is assessed based on metered water usage. The City of Gloversville also collects fees on behalf of the GJJWTF for operation and maintenance, capital



improvement, and infiltration and inflow remediation. A full accounting of the GJJWTF fees is provided in Section 2.7.

As previously noted, for the purposes of comparing rates between municipalities, annual water and wastewater charges were calculated within each municipality on the basis of a typical family using 100 gallons per day per capita for a total of 242 gallons per day.

At a usage of 242 gallons per day the annual wastewater service charge for a typical residential user would be \$315.37. This includes GJJWTF charges as well as the City of Gloversville's sewer maintenance fee.

The Office of the State Comptroller – Open Book New York website indicates that the City of Gloversville reported wastewater related revenues of \$1.98 million dollars, \$2.33 million dollars and \$1.95 million dollars for the years 2012, 2007, and 2002 respectively. Total expenses for the same years were reported as \$2.28 million dollars, \$2.67 million dollars, and \$3.89 million dollars. Table 2-3 presents financial information for the City of Gloversville wastewater System.

Table 2-4: City of Gloversville Wastewater System Rate and Financial Summary

	2012	2007	2002
Annual Charge ¹	\$315.37	--	--
"Outside User" Annual Charge ¹	--	--	--
Total Revenue	\$1,983,079	\$2,330,739	\$1,947,584
Revenue from Sewer Rent	\$1,588,525	\$1,927,846	\$1,668,719
Total Expenses	\$2,276,775	\$2,665,503	\$3,885,415
Net Revenue (Expense)	(\$293,696)	(\$334,764)	(1,937,831)

1. Annual charges calculated based on typical residential usage of 242 gallons per day

The Gloversville Johnstown Joint Wastewater Treatment Facility (GJJWTF) does not assume any debt; all debt is financed by the Cities of Gloversville and Johnstown. According to the GJJWTF, related debt owed by the City of Gloversville was \$1,672,946 (as of January 1, 2013).



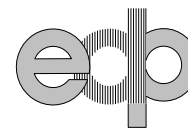
CITY OF GLOVERSVILLE WATER SUPPLY SYSTEM SCHEMATIC

SMART Waters: A Regional Model for Water and Wastewater Services in Fulton County, NY

Basemap Source: Fulton County Planning Department

NOT TO SCALE

**FIGURE:
2-1**



2.2 City of Johnstown

Key Facts

2010 Population: 8,743		Land Area: 4.88 sq. mi.	
Services Provided			
Water		Wastewater Collection (City Service)	
Population Served: 8,900 +/-		Population Served: 8,900 +/-	
Source(s) of water: 3 surface reservoirs		Infrastructure: gravity collection system; 3 primary pump stations	
Reservoir Safe Yield: 2.95 mgd		Annual Cost per Family ¹ : \$29.52	
Treatment Capacity: 4.5 mgd		Wastewater Treatment (GJJWTF)	
Average Daily Demand: 1.72 mgd		Population Served: 25,000 +/-	
Peak Daily Demand: 3.11 mgd		Design Capacity: 13.8 mgd	
Surplus Supply: -0.16 mgd		Average Daily Flow: 5.2 mgd	
Surplus Treatment: 1.39 mgd		Wet Weather Flow: 30 mgd	
Annual Cost per Family ¹ : \$349.69		Surplus Capacity: 8.6 mgd	
		Annual Cost per Family ¹ : \$232.71	
Organizational Structure:	5 member board of elected water commissioners	Organizational Structure (GJJWTF):	6 member Joint Sewer Board, 3 members appointed by each city
Staffing:	5 full time employees	Staffing (GJJWTF):	25 full time employees
2012 Water Board Budget:	Expenses = \$1,728,047 Revenue = \$1,643,550	2012 GJJWTF Annual Budget:	\$4.5 million

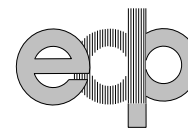
1. Annual cost based on single family residence using 242 gpd

2.2.1 Background

The City of Johnstown, located in central Fulton County, covers an area of approximately 4.88 square miles with a population of 8,743 as reported in the 2010 census. As with the City of Gloversville, as the leather and glove industry declined, population and industry in the City also declined. Population in the City reached a peak of 10,923 in 1950; in 2010 the population was reported as 8,743 or a 20% decrease over 60 years.

2.2.2 Water System

Information cited within this section was obtained from the office of the City Attorney in response to a Freedom of Information Law request of the Water Board unless otherwise noted.



The Johnstown Water Board is authorized to run and operate the City water system. The Johnstown Water Board is an elected board consisting of 5 members. The Water Board oversees the operation of the Water Department. The Water Department has a staff of five (5) full time employees. The water system serves an estimated population of 8,900 through approximately 3,400 service connections (2012 Annual Drinking Water Quality Report).

Water for the City of Johnstown is obtained from three (3) surface water reservoirs, identified as Cork Center Reservoir, Christman Reservoir and Larrabee Reservoir all located west of the City. These three (3) reservoirs provide an estimated reservoir safe yield of 2.95 mgd. The City owns and operates water treatment plants at the Cork Center and Christman Reservoirs. The combined treatment capacity of these two (2) water treatment facilities is 4.5 mgd.

The City currently maintains approximately 4.1 million gallons of finish water storage at four locations; 575,000 gallons at the Cork Center Filtration Plant; 100,000 gallons at the Christman Plant; 900,000 gallons at the Johnson Avenue Tank located on Fulton Street Extension; and 2.5 million gallons at the Maylander Reservoir.

The distribution system infrastructure within the City includes cast iron, ductile iron, and asbestos-cement pipe ranging in size from 4 inches to 12 inches. In addition to the distribution system infrastructure within City limits, the City of Johnstown serves limited areas within the neighboring Towns. Figure 2-2 provides an illustration of key features of the City of Johnstown's water system.

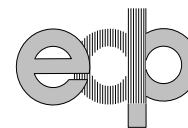
2.2.2.1 Capacity Information

The average daily water demand in 2012 was reported as 1.72 mgd with a peak daily demand of 3.11 mgd. Considering the City's reservoir safe yield, reported as 2.95 mgd, with a 2012 peak daily demand of 3.11 mgd the water system is operating with no reserve capacity in terms of the available surface water supply. In fact, the 2012 peak daily demand of 3.11 mgd exceeds the reservoir supply safe yield by 0.16 mgd (5%).

Due to this finding, based on the 2012 peak daily use reported by the City, that the City does not have excess capacity in its water system, EDP collected additional years of data on peak daily use. Data for 2009-2013 was collected and reviewed.

Table 2-5: City of Johnstown Water System Capacity / Demand Summary (2012)

Supply Type	Surface Water
# Reservoirs:	3
Treatment Type	Slow Sand Filtration
Service Connections	3,400
Average Daily Demand	1.72 mgd
Peak Daily Demand	3.11 mgd
Reservoir Safe Yield	2.95 mgd
Treatment Capacity	4.5 mgd
Surplus Supply Capacity	-0.16 mgd
Surplus Treatment Capacity	1.39 mgd



The data shows peak daily use during this time period as follows:

2013: 2.55 mgd
2012: 3.11 mgd
2011: 2.85 mgd
2010: 2.44 mgd
2009: 2.79 mgd

The historical usage data indicates that the peak daily use in 2012 was the highest among the five years of data reviewed. The data indicated a 5 year trended peak daily use of 2.75 mgd. However, the NYSDEC and NYSDOH consider the systems peak daily use to be the historical peak usage of the system and not limited only to the preceding year. Given the data reviewed it does not appear that the peak usage of 3.11 mgd that occurred in 2012 is an anomalous data point.

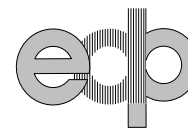
As previously noted, the NYSDOH and NYSDEC require that water systems provide adequate supply to meet the peak daily demand of the system. In the basis of design report for the City of Johnstown water treatment facility, Stearns & Wheler (1991) suggests the use of a consecutive three day average as being a more appropriate design peak for the City of Johnstown due to available storage and significant industrial use during the week. However, EDP did not identify other documentation referring to or approving the use of a three day average peak flow and therefore, for the purposes of this report, the peak day design flow was used in evaluating surplus capacity as required by the NYSDEC.

Fage USA received approval from the Johnstown Common Council in November 2012 for a significant expansion of their existing yogurt making facility within the Johnstown Industrial Park. With the proposed expansion, Fage's water consumption will reportedly increase by over 136% from 127 million gallons a year (0.348 mgd based on 365 day facility operation) to 300 million gallons a year (0.822 mgd based on a 365 day facility operation) by the year 2017. With an increase of nearly 0.5 mgd in water consumption by the year 2017 the City of Johnstown may exceed its existing reservoir safe yield.

2.2.2.2 Rate and Financial Information

As previously noted, for the purposes of comparing rates between municipalities, annual water charges were calculated within each municipality on the basis of a typical family using 100 gallons per day per capita for a total of 242 gallons per day.

At a usage of 242 gallons per day the annual service charge for a typical residential user in the City of Johnstown would be \$294.67. This includes a minimum charge of \$50.60 semi-annually for the first 14,960 gallons plus \$2.53 per 748 gallons for the balance in usage above the



minimum each billing cycle. For an outside user, using the same 242 gallons per day, the annual service charge would be double the in district rates at \$589.34.

The Office of the State Comptroller - Open Book New York website indicates that the City of Johnstown reported total water system related revenues of \$1.64 million dollars, \$1.28 million dollars and \$1.18 million dollars for the years 2012, 2007, and 2002 respectively. Total expenses for the same years were reported as \$1.70 million dollars, \$1.45 million dollars, and \$1.34 million dollars. Table 2-6 presents financial information for the City of Johnstown Water System.

Table 2-6: City of Johnstown Water System Rate and Financial Summary

	2012	2007	2002
Population (2010 and 2000 census)	8,743	8,511	8,511
Water Consumption (million gallons)	496.1	373.1	--
Annual Charge ¹	\$294.67	\$288.85	\$223.62
"Outside User" Annual Charge ¹	\$589.34	\$577.69	\$447.25
Total Revenue	\$1,643,550	\$1,276,807	\$1,183,237
Revenue from Water Sales	\$1,552,485	\$1,167,642	\$1,049,383
Total Expenses	\$1,728,047	\$1,449,252	\$1,337,142
Net Revenue (Expense)	(\$84,497)	(\$172,445)	(\$153,905)

1. Annual charges calculated based on typical residential usage of 242 gallons per day

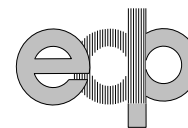
2.2.2.3 Relevant Legal Documents / Contracts

The City of Johnstown did not provide any legal documents related to the water system.

2.2.3 Wastewater System

Operation and maintenance of the City's wastewater collection is provided by the City's Department of Public Works. The City's wastewater collection system flows to a trunk line and treatment facility owned and operated by the Joint Sewer Board.

The majority of the City of Johnstown is serviced via a gravity wastewater collection system consisting primarily of 8 inch sewers. The City's gravity collection system flows into a trunk line installed along the former FJ&G Railroad bed parallel with the Cayadutta Creek. The trunk line extends through the City of Johnstown from the City of Gloversville to the Gloversville Johnstown Joint Wastewater Treatment Facility (GJJWTF). Flows are monitored in the trunk line at the GJJWTF.



The wastewater collection system currently includes 3,137 service connections within the City of Johnstown.

2.2.3.1 Rate and Financial Information

The City collects a sewer maintenance fee of \$0.25 per 100 CF for usage under 200,000 CF and \$0.20 per 100 CF for usage over 200,000 CF. The fee is assessed based on metered water usage. The City of Johnstown also collects fees on behalf of the GJJWTF for operation and maintenance, capital improvement, and infiltration and inflow remediation. A full accounting of the GJJWTF fees is provided in Section 2.7.

As previously noted, for the purposes of comparing rates between municipalities, annual water and wastewater charges were calculated within each municipality on the basis of a typical family using 100 gallons per day per capita for a total of 242 gallons per day.

At a usage of 242 gallons per day the annual wastewater service charge for a typical residential user would be \$262.23. This includes GJJWTF charges as well as the City of Johnstown's sewer maintenance fee.

The Office of the State Comptroller - Open Book New York website indicates that the City of Johnstown reported wastewater related revenues of \$2.03 million dollars, \$1.42 million dollars and \$1.57 million dollars for the years 2012, 2007, and 2002 respectively. Total expenses for the same years were reported as \$3.61 million dollars, \$2.30 million dollars, and \$1.84 million dollars. Table 2-3 presents financial information for the City of Johnstown wastewater system.

Table 2-7: City of Johnstown Wastewater System Rate and Financial Summary

	2012	2007	2002
Annual Charge ¹	\$262.23	\$282.43	\$251.90
"Outside User" Annual Charge ¹	\$524.46	\$564.86	\$503.80
Total Revenue	\$2,030,074	\$1,421,109	\$1,568,580
Revenue from Sewer Rent	\$2,012,861	\$1,382,378	\$1,550,367
Total Expenses	\$3,609,281	\$2,303,495	\$1,837,962
Net Revenue (Expense)	(\$1,579,207)	(\$882,386)	(\$269,382)

1. Annual charges calculated based on typical residential usage of 242 gallons per day

The GJJWTF does not assume any debt; all debt is financed by the Cities of Gloversville and Johnstown. According to the GJJWTF, the GJJWTF related debt owed by the City of Johnstown is \$4,088,062 (as of January 1, 2013).



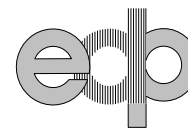
CITY OF JOHNSTOWN WATER SUPPLY & WASTEWATER TREATMENT SYSTEM SCHEMATIC

SMART Waters: A Regional Model for Water and Wastewater Services in Fulton County, NY

Basemap Source: Fulton County Planning Department

NOT TO SCALE

**FIGURE:
2-2**



2.3 Village of Broadalbin

Key Facts

2010 Population: 1,327		Land Area: 1.0 sq. mi.	
Services Provided			
Water		Wastewater (collection and treatment)	
Population Served: 1,500 +/-		Population Served: 1,500 +/-	
Source(s) of water: 3 wells			
Safe Yield: 0.361 mgd		Design Capacity: 0.150 mgd	
Average Daily Demand: 0.104 mgd		Average Daily Flow: 0.085 mgd	
Peak Daily Demand: 0.120 mgd			
Surplus Capacity: 0.241 mgd			
Annual Cost per Family ¹ : \$234.86		Annual Cost per Family ¹ : \$536.83	
Organizational Structure:	Village Department of Public Works	Organizational Structure:	Village Department of Public Works
Staffing:	6 shared DPW employees	Staffing:	6 shared DPW employees
2012 Budget:	Expenses = \$71,378 Revenue = \$88,490	2012 Budget:	Expenses = \$71,378 Revenue = \$88,490

1. Annual cost based on single family residence using 242 gpd

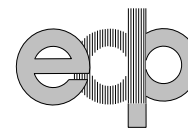
2.3.1 Background

The Village of Broadalbin, located in eastern Fulton County, covers an area of approximately 1.0 square miles with a population of 1,327 as reported in the 2010 census. Population in the Village of Broadalbin has remained relatively consistent over the past 60 years with a population of 1,400 in 1950 and 1,411 in 2000 declining to 1,327 in the most recent 2010 census.

2.3.2 Water System

Information cited within this section was obtained from the Village Clerk unless otherwise noted.

Water service in the Village of Broadalbin is provided by a municipal system owned and operated by the Village. The water system currently serves an estimated population of 1,500 through approximately 550 service connections (2012 Annual Drinking Water Quality Report).



Water for the Village of Broadalbin comes from three (3) groundwater wells; two located on North Second Avenue and one located on South Second Avenue. The overall groundwater supply safe yield is reported as 0.361 mgd. The two wells on North Second Avenue produce 194 gpm (Well #1) and 200 gpm (Well #3) and the well located on South Second Avenue produced 57 gpm.

The Village currently maintains approximately 300,000 gallons of finish water storage within a single elevated tank on Midline Road. The distribution system infrastructure within the Village includes cast iron, ductile iron, and pvc pipe ranging in size from 6 inch to 10 inches. In addition to the distribution system infrastructure within Village limits, the Village provides water to the Town of Broadalbin with a main along Union Mills Road from the Village limits to the Town Garage and to approximately 40 other properties along Midline Road, Third Avenue, and West Main Street. Figure 2-3 provides an illustration of key features of the Village of Broadalbin's water system.

The Department of Public Works (DPW) operates and maintains the Village's water system. The Village reports that a staff of 6 DPW employees are involved with operation and maintenance of the water system on a part-time basis splitting their time with other DPW operations including wastewater system operation and maintenance.

2.3.2.1 Capacity Information

The average daily water demand in 2012 was reported 0.110 mgd; peak daily demand information was not directly available. Assuming a peak daily demand of twice the average daily demand would yield a peak daily demand of 0.220 mgd. Water consumption within the Village has generally been declining over the past 10 years; in 2002 the total volume of water produced was 48.5 million gallons while in 2012 the total volume produced was 40.2 million gallons.

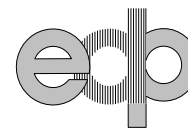
With a projected peak daily demand of 0.220 mgd in 2012 and a groundwater well safe yield of 0.361 mgd, the Village of Broadalbin water system operated with a surplus capacity of 0.141 mgd; in other words the system is currently operating at approximately 61% of capacity.

Table 2-8: Village of Broadalbin Water System Capacity / Demand Summary (2012)

Supply Type	Groundwater
Treatment Type	Chlorination
Service Connections	550
Average Daily Demand	0.104 mgd
Peak Daily Demand	0.120 mgd
Supply Safe Yield	0.361mgd
Surplus Capacity	0.241 mgd

2.3.2.2 Rate and Financial Information

As previously noted, for the purposes of comparing rates between municipalities, annual water charges were calculated within each municipality on the basis of a typical family using 100 gallons per day per capita for a total of 242 gallons per day.



At a usage of 242 gallons per day the annual service charge for a typical residential user would be \$234.86. This includes a minimum charge of \$35.75 semi-annually for the first 15,000 gallons plus \$2.86 per 1000 gallons for the balance in usage above the minimum. For an outside user, using the same 242 gallons per day, the annual service charge is double the in district rate at \$469.73.

The Office of the State Comptroller - Open Book New York website indicates that the Village of Broadalbin reported total water system related revenues of \$88,490, \$122,139 and \$114,622 for the years 2012, 2007, and 2002 respectively. Total expenses for the same years were reported as \$71,378, \$140,826, and \$149,409. Table 2-9 presents financial information for the Village of Broadalbin water system.

Table 2-9: Village of Broadalbin Water System Rate and Financial Summary

	2012	2007	2002
Population (2010 and 2000 census)	1,327	1,411	1,411
Water Consumption (million gallons)	28.2	32.5	36.5
Annual Charge ¹	\$234.86	\$234.86	\$234.86
"Outside User" Annual Charge ¹	\$469.73	--	--
Total Revenue	\$88,490	\$122,139	\$114,622
Revenue from Water Sales	\$85,368	\$97,435	\$105,453
Total Expenses	\$71,378	\$140,826	\$149,409
Net Revenues (Expenses)	\$17,112	(\$18,687)	(\$34,787)

1. Annual charges calculated based on typical residential usage of 242 gallons per day

The Village of Broadalbin did not report any water system related debt.

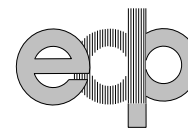
2.3.2.3 Relevant Legal Documents / Contracts

The Village of Broadalbin maintains an agreement, executed August 20, 2003, with the Town of Mayfield for permission to own and maintain water lines within the Town. A copy of this agreement is included within Appendix A.

The Village of Broadalbin maintains a Water System inter-municipal agreement with the Town of Broadalbin, dated March 5, 2008 and amended May 19, 2009 and September 10, 2012. The September 10, 2012 amendment was provided by the Village of Broadalbin and is included within Appendix A.

2.3.3 Wastewater System

Wastewater collection and treatment in the Village of Broadalbin is provided by a municipal system owned and operated by the Village. The wastewater treatment plant and collection system were constructed in 1997 and serve the Village of Broadalbin (population 1,327 – 2010 Census) including approximately 493 residential service connections, 33 commercial



connections and 4 industrial connections (Sear-Brown 2002). The Village's wastewater collection system includes a gravity collection system, seven (7) pump stations and a wastewater treatment plant located at 32 South Second Avenue along the Kenneytto Creek.

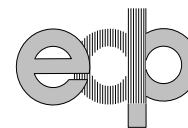
Operation and maintenance of the Village's wastewater system is conducted through a collaborative effort between the Village Department of Public Works (DPW) and John M. McDonald Engineering, P.C., an outside consultant. The Village reports that a staff of 6 DPW employees are involved with operation and maintenance of the wastewater system on a part-time basis splitting their time with other DPW operations including water system operation and maintenance. The Village of Broadalbin contracts with John M. McDonald Engineering, P.C. to oversee operation and maintenance of the wastewater treatment plant.

Village DPW personnel are responsible for operation and maintenance of the wastewater collection system and certain wastewater treatment plant operation and maintenance tasks. The outside consultant is responsible for overseeing plant operations with a certified wastewater treatment plant operator, performing routine treatment plant equipment maintenance, reporting to the New York State Department of Environmental Conservation, providing technical assistance and coordinating with the Village DPW on necessary work at the facility.

2.3.3.1 Capacity Information

The wastewater treatment facility includes a bar rack and screen system, grit chamber, primary clarifier, rotating biological contactors, secondary clarifier, and tertiary sand filtration. The facility has a design flow capacity of 0.15 mgd and a design influent loading of 562 lb/day and 487 lb/day for BOD and total suspended solids respectively. The average daily flow for the years 2012 and 2007 was 0.085 mgd and 0.107 mgd or 57% and 71% of the design maximum daily flow respectively. Table 2-10 presents a summary of the treatment facility design parameters and historical loading.

Information related to wet weather flows, BOD, and total suspended solids loading was not available. Based solely on average daily design flow it would appear that the wastewater treatment plant has some level of surplus capacity; however, additional information related to average daily flow history, peak flows and loading would be required to confirm surplus capacity.

**Table 2-10: Village of Broadalbin Wastewater Treatment Plant Capacity Information**

Parameter	2012	2007	2002	Design Capacity	Surplus Capacity ¹
Average Daily Flow (mgd)	0.085	0.107	--	0.150	0.065 (43%)²
BOD ₅ (lb/day)	--	--	--	562	--
Suspended Solids (lb/day)	--	--	--	487	--
TKN (lb/day)	--	--	--	--	--

1. Based on 2012 loading.

2. Surplus average daily flow based on the facilities design capacity (0.15 mgd) and the 2012 average daily flow. Additional information is necessary related to historical average flows, peak flows, and loading to confirm surplus capacity.

2.3.3.2 Rate and Financial Information

Wastewater fees are calculated based on volume of water used over a six month period. Current fees include a basic charge of \$73.35 for the first 15,000 gallons used and an additional charge of \$6.83 per 1000 gallons for usage of 15,000 gallons.

As previously noted, for the purposes of comparing rates between municipalities, annual wastewater charges were calculated within each municipality on the basis of a typical family using 100 gallons per day per capita for a total of 242 gallons per day.

At a usage of 242 gallons per day, the annual service charge for a typical residential user would be \$536.83. The Village of Broadalbin does not currently have any outside users of the wastewater system and as such does not have an established outside user rate.

The Office of the State Comptroller - Open Book New York website indicates that the Village of Broadalbin reported total wastewater system related revenues of \$326,529, \$396,305 and \$354,655 for the years 2012, 2007, and 2002 respectively. Total expenses for the same years were reported as \$276,092, \$512,467, and \$369,696. Table 2-17 presents financial information for the Village of Broadalbin wastewater system:

Table 2-11: Village of Broadalbin Wastewater System Rate and Financial Summary

	2012	2007	2002
Annual Charge ¹	\$536.83	\$357.70	\$234.86
"Outside User" Annual Charge ¹	--	--	--
Total Revenue	\$326,529	\$396,305	\$354,655
Revenue from Sewer Rents	\$176,349	\$135,913	\$99,931
Total Expenses	\$276,092	\$512,467	\$369,696
Net Revenue (Expenses)	\$50,437	(\$116,162)	(\$15,041)

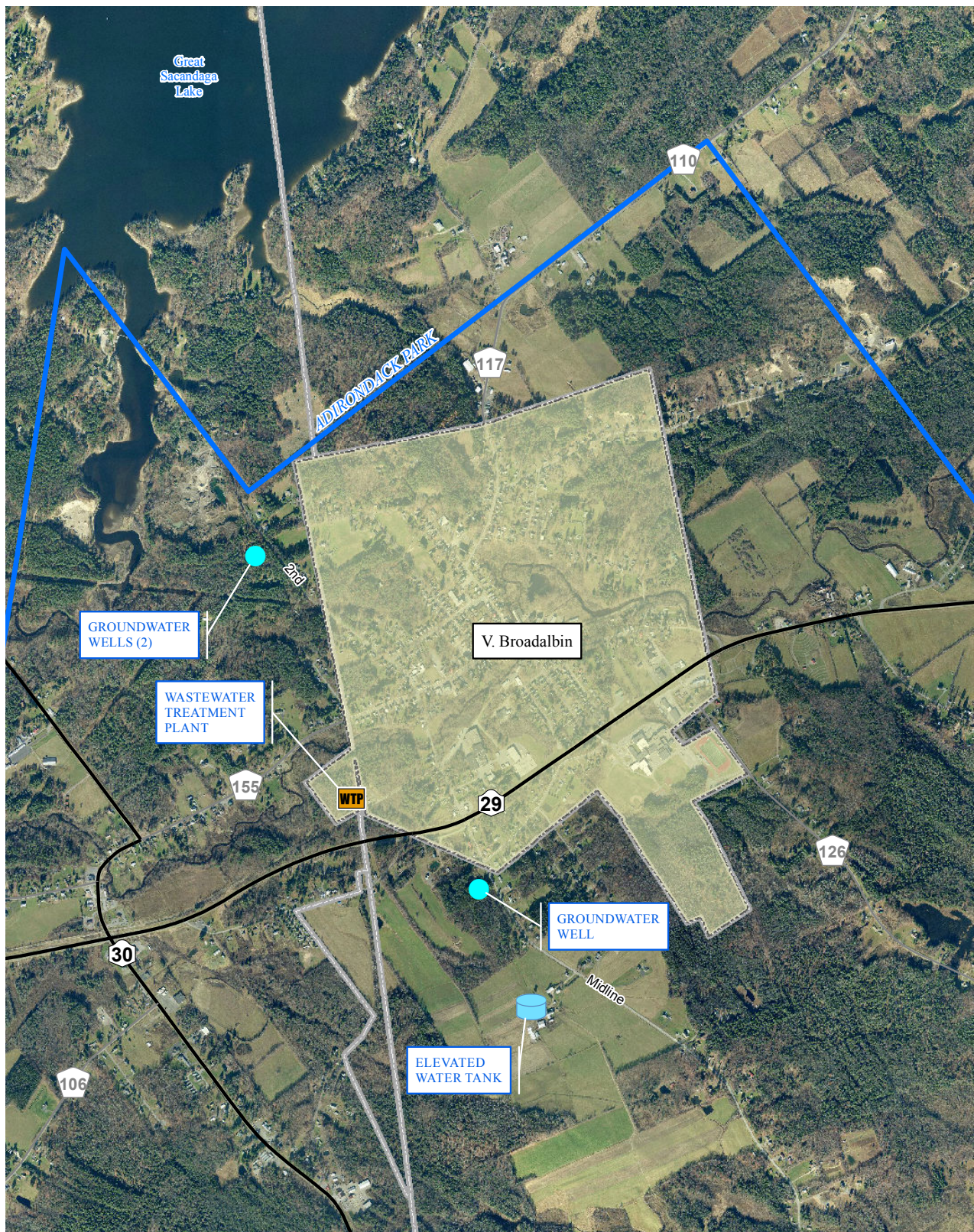
1. Annual charges calculated based on typical residential usage of 242 gallons per day



The Village of Broadalbin reported current wastewater system debt of \$2,433,477 from a 28 year loan taken in 2007.

2.3.3.3 Relevant Legal Documents / Contracts

As previously noted, operation and maintenance of the Village's wastewater system is conducted through a collaborative effort between the Village Department of Public Works (DPW) and John M. McDonald Engineering, P.C. A copy of the current agreement between the Village and John M. McDonald Engineering, P.C. is included within Appendix A. Per this agreement, the Village pays John M. McDonald Engineering, P.C. a weekly amount of \$961.73 (\$50,009.96 per year) to assist in the operation and maintenance of the wastewater treatment facility.



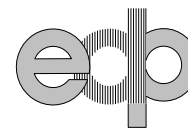
VILLAGE OF BROADALBIN WATER SUPPLY & WASTEWATER TREATMENT SYSTEM SCHEMATIC

SMART Waters: A Regional Model for Water and Wastewater Services in Fulton County, NY

Basemap Source: Fulton County Planning Department

NOT TO SCALE

FIGURE:
2-3



2.4 Village of Mayfield

Key Facts

2010 Population: 832		Land Area: 1.1 sq. mi.	
Services Provided			
Water		Wastewater (collection and treatment)	
Population Served: 800 +/-		Population Served: 800 +/-	
Source(s) of water: 4 wells		Design Capacity: 0.125 mgd	
Safe Yield: 0.15 mgd		Average Daily Flow: 0.055 mgd	
Average Daily Demand: 0.092 mgd			
Peak Daily Demand: 0.201 mgd			
Surplus Capacity: 0			
Annual Cost per Family ¹ : \$214.15		Annual Cost per Family ¹ : \$489.26	
Organizational Structure:	Village Department of Public Works	Organizational Structure:	Village Department of Public Works
Staffing:	5 shared DPW employees	Staffing:	5 shared DPW employees
2012 Budget:	Expenses = \$57,134 Revenue = \$68,009	2012 Budget:	Expenses = \$262,647 Revenue = \$250,091

1. Annual cost based on single family residence using 242 gpd

2.4.1 Background

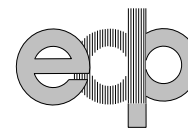
The Village of Mayfield, located in eastern Fulton County, covers an area of approximately 1.1 square miles with a population of 832 as reported in the 2010 census. The overall population in the Village of Mayfield has decreased over the past 40 years from 981 in 1970 to 832 in 2010.

2.4.2 Water System

Information cited within this report was obtained from the Village Clerk unless otherwise noted.

Water service in the Village of Mayfield is provided by a municipal system owned and operated by the Village. The water system currently serves an estimated population of 800 through approximately 355 service connections (2012 Annual Drinking Water Quality Report).

Water for the Village of Mayfield is withdrawn from four (4) groundwater wells located along Pumphouse Road. The overall groundwater supply safe yield is reported as 0.150 mgd.



The Village currently maintains approximately 150,000 gallons of finish water storage within a single elevated tank on North Main Street. The distribution system infrastructure within the Village includes approximately 5 miles of cast iron, ductile iron, and pvc pipe ranging in size from 2 inch to 8 inches. In addition to the distribution system infrastructure within Village limits, the Village provides service to a limited number of properties along Route 30 north and south of the Village and properties along Lakeside Drive northeast of the Village. Figure 2-4 provides a basic schematic of the key features of the Village of Mayfield water system.

The Village's Department of Public Works (DPW) operates and maintains the Village's water system. The Village reports that a staff of 5 DPW employees are involved with operation and maintenance of the water system on a part-time basis splitting their time with other DPW operations including wastewater system operation and maintenance.

2.4.2.1 Capacity Information

The average daily water demand in 2012 was reported 0.092 mgd with a peak daily demand of 0.201 mgd. Water production for the years 2007 and 2012 showed a 9% increase in production over that five year period from 29.09 million gallons in 2007 to 31.69 million gallons in 2012.

With a peak daily demand of 0.201 mgd in 2012 and a water supply safe yield of 0.15 mgd, the Village of Mayfield's water system is operating with no excess capacity. The 2012 peak daily demand of 0.201 mgd exceeded the available safe yield (0.15 mgd) of the system by 0.051 mgd (34%). This suggests that additional water supply is necessary to support any expansion or additional demands with the Village's water system.

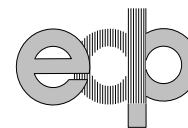
Table 2-12: Village of Mayfield Water System Capacity / Demand Summary (2012)

Supply Type	Groundwater
Treatment Type	Chlorination
Service Connections	355
Average Daily Demand	0.092 mgd
Peak Daily Demand	0.201 mgd
Supply Safe Yield	0.15 mgd
Surplus Capacity	-0.051 mgd

2.4.2.2 Rate and Financial Information

As previously noted, for the purposes of comparing rates between municipalities, annual water charges were calculated within each municipality on the basis of a typical family using 100 gallons per day per capita for a total of 242 gallons per day.

At a usage of 242 gallons per day the annual service charge for a typical residential user would be \$214.15. This includes a minimum charge of \$58.00 semi-annually for the first 18,000 gallons plus \$1.92 per 1000 gallons for the balance in usage above the minimum. For an outside user, using the same 242 gallons per day, the annual service charge would be \$311.25.



The Office of the State Comptroller - Open Book New York website indicates that the Village of Mayfield reported total water system related revenues of \$68,009, \$61,641 and \$45,301 for the years 2012, 2007, and 2002 respectively. Total expenses for the same years were reported as \$57,134, \$64,713, and \$44,229. Table 2-13 presents financial information for the Village of Mayfield water system:

Table 2-13: Village of Mayfield Water System Rate and Financial Summary

	2012	2007	2002
Population (2010 and 2000 census)	832	800	800
Water Production (million gallons)	31.7	29.1	--
Annual Charge ¹	\$214.15	\$192.33	\$192.33
"Outside User" Annual Charge ¹	\$311.25	--	--
Total Revenue	\$68,009	\$61,641	\$45,301
Revenue from Water Sales	\$57,710	\$52,128	\$43,542
Total Expenses	\$57,134	\$64,713	\$44,229
Net Revenue (Expense)	\$10,875	(\$3,072)	\$1,072

1. Annual charges calculated based on typical residential usage of 242 gallons per day

The Village of Mayfield did not report any water system related debt.

2.4.2.3 Relevant Legal Documents / Contracts

The Village of Mayfield did not provide any legal documents related to their water system.

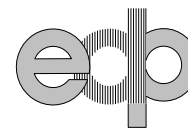
2.4.3 Wastewater System

Wastewater service in the Village of Mayfield is provided by a municipal system owned and operated by the Village. The wastewater treatment plant and first phase of the collection system were constructed in 2001. Phase 2 of the wastewater collection system was completed in 2007 bringing the total number of service connections to 331.

The Department of Public Works (DPW) operates and maintains the Village's wastewater system. The Village reports that a staff of 5 DPW employees are involved with operation and maintenance of the wastewater system on a part-time basis splitting their time with other DPW operations including water system operation and maintenance.

2.4.3.1 Capacity Information

The wastewater treatment facility includes a grit trap, sequencing batch reactor, sand filtration, and seasonal chlorination. The wastewater treatment facility has an average daily flow design capacity of 0.125 mgd and is rated for average loadings of BOD₅, suspended solids, and TKN of 250 lb/day, 250 lb/day, and 42 lb/day respectively. Historical data was provided related to the peak flows. Average daily flows of 0.055 mgd was reported for 2012. No additional data was



provided. Table 2-22 presents a summary of the treatment facility design parameters and historical loading.

Information related to wet weather flows, BOD, and total suspended solids loading was not available. Based solely on average daily design flow it would appear that the wastewater treatment plant has some level of surplus capacity; however, additional information related to average daily flow history, peak flows and loading would be required to confirm surplus capacity.

Table 2-14: Village of Mayfield Wastewater Treatment Plant Capacity Information

Parameter	2012	2007	2002	Design Capacity	Surplus Capacity ¹
Average Daily Flow (mgd)	0.055	--	--	0.125	0.07 (56%)²
BOD ₅ (lb/day)	--	--	--	250	--
Suspended Solids (lb/day)	--	--	--	250	--
TKN (lb/day)	--	--	--	42	--

1. Based on 2012 loading.
2. Surplus average daily flow based on the facilities design capacity (0.15 mgd) and the 2012 average daily flow. Additional information is necessary related to historical average flows, peak flows, and loading to confirm surplus capacity.

2.4.3.2 Rate and Financial Information

Wastewater fees are calculated based on the volume of water used over a six month period. Current fees include a basic charge of \$136.00 for the first 18,000 gallons used and an additional charge of \$4.25 per 1000 gallons for usage over 18,000 gallons.

As previously noted, for the purposes of comparing rates between municipalities, annual wastewater charges were calculated within each municipality on the basis of a typical family using 100 gallons per day per capita for a total of 242 gallons per day.

At a usage of 242 gallons per day the annual service charge for a typical residential user would be \$489.26. The Village of Mayfield did not provide an outside user rate.

The Office of the State Comptroller - Open Book New York website indicates that the Village of Mayfield reported total wastewater system related revenues of \$250,091, \$223,083 and \$155,321 for the years 2012, 2007, and 2002 respectively. Total expenses for the same years were reported as \$262,647, \$545,426, and \$173,687. Table 2-15 presents financial information for the Village of Mayfield wastewater system:

**Table 2-15: Village of Mayfield Wastewater System Rate and Financial Summary**

	2012	2007	2002
Annual Charge ¹	\$489.26	--	--
"Outside User" Annual Charge ¹	--	--	--
Total Revenue	\$250,091	\$223,083	\$155,321
Revenue from Sewer Rents	\$126,746	\$90,849	\$46,600
Total Expenses	\$262,647	\$545,426	\$173,687
Net Revenue (Expense)	(\$12,556)	(\$322,343)	(\$18,366)

1. Annual charges calculated based on typical residential usage of 242 gallons per day

The Village of Mayfield reported current wastewater system debt of \$1,347,000 from three loans taken in 1998, 2002 and 2008 and due to mature in 2017, 2032, and 2037 respectively.

2.4.3.3 Relevant Legal Documents / Contracts

The Village of Mayfield did not provide any legal documents or contracts related to their wastewater system.



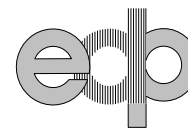
VILLAGE OF MAYFIELD WATER SUPPLY & WASTEWATER TREATMENT SYSTEM SCHEMATIC

SMART Waters: A Regional Model for Water and Wastewater Services in Fulton County, NY

Basemap Source: Fulton County Planning Department

NOT TO SCALE

**FIGURE:
2-4**



2.5 Village of Northville

Key Facts

2010 Population: 1,099		Land Area: 1.4 sq. mi.	
Services Provided			
Water			
Population Served: 1,100 +/-			
Source(s) of water: 2 wells		Wastewater Services	
Safe Yield: 0.504 mgd		Not Provided	
Average Daily Demand: 0.089 mgd			
Peak Daily Demand: 0.274 mgd			
Surplus Capacity: 0.230			
Annual Cost per Family ¹ : \$241.49			
Organizational Structure:	Village Department of Public Works		
Staffing:	4 shared DPW employees		
2012 Budget:	Expenses = \$82,891 Revenue = \$130,207		

1. Annual cost based on single family residence using 242 gpd

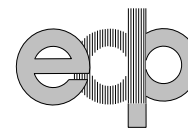
2.5.1 Background

The Village of Northville, located in northeastern Fulton County, covers an area of approximately 1.4 square miles with a population of 1,099 as reported in the 2010 census. The overall population in the Village of Mayfield has decreased by 3.5% over the past 10 years from 1139 in 2000 to 1,099 in 2010.

2.5.2 Water System

Information cited within this report was obtained from the Village Highway Superintendent and Treasurer unless otherwise noted. Water service in the Village of Northville is provided by a municipal system owned and operated by the Village. The water system currently serves an estimated population of 1,099 through approximately 556 service connections (2012 Annual Drinking Water Quality Report).

Water for the Village of Northville comes from two (2) groundwater wells located along the Sacandaga River north of the Village. The overall groundwater supply safe yield is reported as 0.504 mgd.



The Village currently maintains approximately 680,000 gallons of finish water storage within two concrete storage tanks on Ridge Road east of the Village. The distribution system infrastructure within the Village includes cast iron, ductile iron, and asbestos cement pipe ranging in size from 4 inches to 10 inches. In addition to the distribution system infrastructure within Village limits, the Village provides service to a limited number of properties along Old State Road north of the Village. Figure 2-5 provides a basic schematic of the key features of the Village of Northville's water system.

Operation and maintenance of the Village's water system is performed by the Department of Public Works (DPW). The Village reports that a staff of 4 DPW employees are involved with operation and maintenance of the water system on a part-time basis splitting their time with other DPW operations.

2.5.2.1 Capacity Information

The average daily water demand in 2012 was reported 0.089 mgd with a peak daily demand of 0.274 mgd. The Village provided water production data for the years 2007 and 2012; the data indicates a 20% decrease in production over the five year period from 40.7 million gallons in 2007 to 32.6 million gallons in 2012.

With a 2012 peak daily demand of 0.274 mgd and groundwater supply safe yield of 0.504 mgd, the Village of Northville's water system is operating with a surplus capacity of 0.230 mgd; in other words the system is currently operating at approximately 54% of capacity.

Table 2-16: Village of Northville Water System Capacity / Demand Summary (2012)

Supply Type	Groundwater
Treatment Type	Chlorination
Service Connections	556
Average Daily Demand	0.089 mgd
Peak Daily Demand	0.274 mgd
Supply Safe Yield	0.504 mgd
Surplus Capacity	0.230 mgd

2.5.2.2 Rate and Financial Information

As previously noted, for the purposes of comparing rates between municipalities, annual water charges were calculated within each municipality on the basis of a typical family using 100 gallons per day per capita for a total of 242 gallons per day.

At a usage of 242 gallons per day the annual service charge for a typical residential user would be \$241.49. This includes a minimum charge of \$30.00 semi-annually for the first 2,500 gallons plus \$2.21 per 1000 gallons for the balance in usage above the minimum. The Village of Northville does not maintain a separate outside user rate.

The Office of the State Comptroller - Open Book New York website indicates that the Village of Northville reported total water system related revenues of \$130,207, \$106,638 and \$90,695 for



the years 2012, 2007, and 2002 respectively. Total expenses for the same years were reported as \$82,891, \$84,208, and \$79,603. Table 2-17 presents financial information for the Village of Northville water system:

Table 2-17: Village of Northville Water System Rate and Financial Summary

	2012	2007	2002
Population (2010 and 2000 census)	1,099	1,139	1,139
Water Produced (million gallons)	32.6	40.7	--
Annual Charge ^{1,2}	\$241.49	\$126.50	\$110.00
"Outside User" Annual Charge ¹			
Total Revenue	\$130,207	\$106,638	\$90,695
Revenue from Water Sales	\$130,127	\$104,365	\$89,120
Total Expenses	\$94,374	\$94,588	\$88,879
Net Revenue (Expense)	\$35,833	\$12,050	\$1,816

1. Annual charges calculated based on typical residential usage of 242 gallons per day

2. The Village of Northville moved to metered water based charges between 2007 and 2012

The Village of Northville reported water system related debt of \$49,025 related to a 1997 Capital Project due to mature in 2017.

2.5.2.3 Relevant Legal Documents / Contracts

The agreement between Fulton County and the Hudson River Black River Regulating District (HRBRD) for the purchase of water rights, benefitting the Village of Northville, is included within Appendix A.



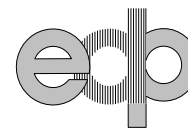
VILLAGE OF NORTHVILLE & TOWN OF NORTHAMPTON WATER SUPPLY & WASTEWATER TREATMENT SYSTEM SCHEMATIC

SMART Waters: A Regional Model for Water and Wastewater Services in Fulton County, NY

Basemap Source: Fulton County Planning Department

NOT TO SCALE

FIGURE:
2-5



2.6 Town of Northampton/Sacandaga Park

Key Facts

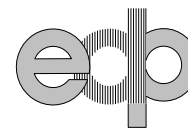
2010 Population: 2,670 (Town), 338 (Sacandaga Park)		Land Area: 21 sq. mi. (Town)	
Services Provided			
Water		Wastewater (collection and treatment)	
Population Served: 830 +/-		Population Served: +/-	
Source(s) of water: 4 wells			
Safe Yield: 0.288 mgd		Design Capacity: 0.075 mgd	
Average Daily Demand: 0.046 mgd		Average Daily Flow: 0.05 mgd	
Peak Daily Demand: 0.163 mgd			
Surplus Capacity: 0.125 mgd			
Annual Cost per Family ¹ : \$343.16		Annual Cost per Family ¹ : \$468.60	
Organizational Structure: Town Board – Water District		Organizational Structure: Town Board – Sewer District	
Staffing: 3 shared DPW employees		Staffing: 3 shared DPW employees	
2012 Budget: Expenses = \$79,378 Revenue = \$109,161		2012 Budget: Expenses = \$67,462 Revenue = \$112,877	

1. Annual cost based on single family residence using 242 gpd

2.6.1 Background

The Town of Northampton operates a Water District and a Sewer District serving an area known as Sacandaga Park. The Sacandaga Park area was formerly an amusement park owned by the FJ&G Railroad Company prior to the formation of the Great Sacandaga Lake. The FJ&G Railroad Company constructed the original water system in this area in the early 1900's. The system was subsequently sold to a private company around the time the Great Sacandaga Lake was constructed. The Town of Northampton purchased the water system in 1985 and formed a Town Water District.

Wastewater service in the Sacandaga Park area is provided by a municipal system owned and operated by the Town. According to the Sear-Brown 2002 report, the wastewater system was constructed in the mid 1980's under private ownership. The wastewater treatment system did not comply with Federal and State standards and a consent order was issued requiring plant upgrades. The upgrades were completed in the late 1990's or early 2000. The Town of Northampton assumed ownership of the system at the same time it acquired the water system and a Town Sewer District was formed.



Information cited within this report was obtained from the Town Clerk and Water System Operator unless otherwise noted.

2.6.2 Water System

The current Town of Northampton Water District serves the original Sacandaga Park area and a limited number of private properties to which water mains have been extended beyond the original limits of the system.

The water system currently serves an estimated population of 830 through approximately 216 service connections (2012 Annual Drinking Water Quality Report).

Water for the Sacandaga Park System comes from four (4) groundwater wells located in the western area of the Town along Mountain Road (County Highway 123). The overall water supply safe yield is reported as 0.288 mgd.

The Town currently maintains approximately 100,000 gallons of finish water storage within a single concrete storage tank located on Collins Gifford Valley Road. The distribution system infrastructure within the Town includes PVC pipe ranging in size from 2 inches to 6 inches. In addition to the distribution system infrastructure within the Sacandaga Park area the Town serves various private properties along the water mains. Figure 2-5 provides a basic schematic of the key features of the Town of Northampton's water system.

The Town's Department of Public Works (DPW) operates and maintains the Town's water system. The Town reports that a staff of 3 DPW employees are involved with operation and maintenance of the water system on a part-time basis splitting their time with other DPW operations including wastewater system operation and maintenance.

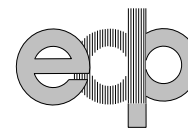
2.6.2.1 Capacity Information

The average daily water demand in 2012 was reported as 0.046 mgd with a peak daily demand of 0.163 mgd. Water production within the Town was relatively consistent between 2007 and 2012 with 17.6 million gallons produced in 2007 and 16.9 million gallons produced in 2012.

With a peak daily demand of 0.163 mgd in 2012 and a water supply safe yield of 0.288 mgd, the Town of Northampton's water system is operating with a surplus capacity of 0.125 mgd; in other words the system is currently operating at approximately 56% of capacity.

Table 2-18: Town of Northampton Water System Capacity / Demand Summary (2012)

Supply Type	Groundwater
Treatment Type	Chlorination
Service Connections	216
Average Daily Demand	0.046 mgd
Peak Daily Demand	0.163 mgd
Supply Safe Yield	0.288 mgd
Surplus Capacity	0.125 mgd



2.6.2.2 Rate and Financial Information

At this time, the Town of Northampton does not meter water consumption. Customers are billed based on a fixture count within each residence. The Town maintains a list of the number of plumbing fixtures for each service connection and bills each based on the number of fixtures. The Town Clerk provided the total billing per year and an average value was determined based on the number of users. **The average billing for the Town of Northampton was \$343.16 for the year 2012.**

The Office of the State Comptroller - Open Book New York website indicates that the Town of Northampton reported total water system related revenues of \$88,490, \$122,139 and \$114,622 for the years 2012, 2007, and 2002 respectively. Total expenses for the same years were reported as \$71,378, \$140,826, and \$149,409. Table 2-9 presents financial information for the Town of Northampton water system:

Table 2-19: Town of Northampton Water System Rate and Financial Summary

	2012	2007	2002
Population (2010 and 2000 census)	2,670	2,760	2,760
Water Produced (million gallons)	16.9	17.6	
Annual Charge ¹	\$343.16	--	--
"Outside User" Annual Charge ¹	--	--	--
Total Revenue	\$109,161	\$71,949	\$85,101
Total Expenses	\$79,378	\$87,194	\$65,173
Net Revenue (Expense)	\$29,783	(\$15,245)	\$19,928

1. Annual charge represents average charge in system.

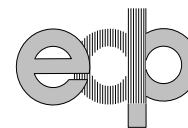
Information regarding the Town of Northampton's current water system debt was not available.

2.6.2.3 Relevant Legal Documents / Contracts

The Town of Northampton did not provide any legal documents or contracts.

2.6.3 Wastewater System

Operation and maintenance of the wastewater system is now performed by the Department of Public Works (DPW). The Town reports that a staff of 3 DPW employees are involved with operation and maintenance of the wastewater system on a part-time basis splitting their time with other DPW operations including water system operation and maintenance.



2.6.3.1 Capacity Information

The wastewater treatment facility includes an Imhoff tank, an equalization tank, rotating biological contactors, a secondary clarifier and seasonal chlorination (Sear-Brown 2002). The wastewater treatment facility has an average daily flow design capacity of 0.075 mgd. AES Northeast of Plattsburgh, New York prepared an evaluation of the Town's sewer system in 2007 with an addendum issued in 2009. The 2009 addendum reported average daily flow of 50,000 gpd with a peak daily flow of 330,000 gpd.

The 2009 addendum further suggests a future average daily flow of 68,000 gpd leaving minimal surplus capacity available based on a design capacity of 75,000 gpd. Based on this information it does not appear that the current wastewater treatment facility has the ability to receive any significant quantity of additional flow beyond the future projections included within the AES Northeast report in 2009.

Table 2-20: Town of Northampton Wastewater Treatment Plant Capacity Information

Parameter	2009	Future Loading	Design Capacity	Surplus Capacity ¹
Average Daily Flow (mgd)	0.05	0.068	0.075	0.007 (9%)
BOD ₅ (mg/l)	--	--	--	--
Suspended Solids (lb/day)	--	--	--	--
TKN (lb/day)	--	--	--	--

1. Based on future loading as predicted by AES Northeast in 2009.

2.6.3.2 Rate and Financial Information

As with the Town of Northampton water service rates, wastewater service rates are based on a fixture count within each residence. The Town maintains a list of the number of plumbing fixtures for each service connection and bills each based on the number of fixtures. The Town Clerk provided the total billing per year and an average value was determined based on the number of users. **The average billing for the Town of Northampton wastewater service was \$468.60 for the year 2012.**

The Office of the State Comptroller - Open Book New York website indicates that the Town of Northampton reported total wastewater system related revenues of \$112,877, \$95,918 and \$53,431 for the years 2012, 2007, and 2002 respectively. Total expenses for the same years were reported as \$67,462, \$60,894, and \$89,774. Table 2-9 presents financial information for the Town of Northampton's wastewater system:

**Table 2-21: Town of Northampton Wastewater System Rate and Financial Summary**

	2012	2007	2002
Annual Charge ¹	\$468.60	--	--
"Outside User" Annual Charge ¹	--	--	--
Total Revenue	\$112,877	\$95,918	\$53,431
Revenue from Wastewater Rent	\$40,413	\$31,294	\$13,700
Total Expenses	\$67,462	\$60,894	\$89,774
Net Revenue (Expense)	\$45,415	\$35,024	(\$36,343)

1. Annual charge represents average charge in system.

Information regarding the Town of Northampton's current wastewater system debt was not available.

2.6.3.3 Relevant Legal Documents / Contracts

The Town of Northampton did not provide any legal documents or contracts related to their wastewater system.



2.7 Groversville - Johnstown Joint Wastewater Treatment Facility (GJJWTF)

Information cited within this section was obtained from the Groversville Johnstown Joint Sewer Board (JSB) unless otherwise noted.

Prior to 1972, the City of Groversville owned and operated a wastewater collection system. This collection system transported wastewater to a treatment plant that the City owned and operated on Harrison Street in the City of Groversville. Treated wastewater was discharged into the Cayadutta Creek. The City of Johnstown had a collection system but no wastewater treatment facility. Untreated wastewater from the City of Johnstown's collection system was discharged into the Cayadutta Creek.

The discharging of untreated and treated wastewater into the Cayadutta Creek created significant water quality concerns. By the mid 1960's, New York State ordered both Cities to construct new wastewater treatment and disposal facilities. These State orders resulted in the Cities of Groversville and Johnstown discussing how the Cities could work together to address their needs. In 1964, the two (2) Cities executed a landmark Agreement titled the "Groversville-Johnstown Joint Sewer Contract" (GJJSC).

Section 1 of the GJJSC states:

"The parties hereto agree to jointly construct a sewage disposal plant to meet the needs of both municipalities and to provide for the operation and maintenance thereof, of the type specified and under the terms and conditions hereinafter set forth.

The Sewage treatment plant will be located on premises formerly in the Town of Johnstown, County of Fulton and State of New York, now by virtue of annexation situate in the City of Johnstown, County of Fulton and State of New York as described in Schedule A hereto annexed and made a part hereof as if set forth in full.

The Trunk Line to be owned by the parties hereto is briefly described as commencing at the present Groversville Sewage Plant, Harrison Street, City of Groversville, N.Y. and running therefrom generally southerly along Fonda, Johnstown and Groversville right-of-way to the sewer main recently constructed by the City of Johnstown which is to be a part of said trunk line and following said sewer main that varies in width from 24 to 36 inches as it is now laid out and constructed along the Fonda, Johnstown and Groversville right-of-way to its present terminus at West State Street, Johnstown, N.Y., and continuing on in a southerly direction generally along the Cayadutta Creek to the above-mentioned sewage treatment plant site and the actual plant to be constructed."

The GJJSC set the framework for the construction of a regional wastewater treatment facility instead of each City constructing and operating their own.



With the GJJSC in place, the Cities began the design, permitting and construction of the regional wastewater treatment facility. This regional facility, now known as the Gloversville-Johnstown Joint Wastewater Treatment Facility (GJJWTF), officially opened in 1972 and provides secondary treatment for all wastewater generated in the Cities of Gloversville and Johnstown and some areas outside the two (2) Cities.

The original 1964 GJJSC called for the City of Gloversville to be responsible for 55% of the construction and operation and maintenance of the facility and the City of Johnstown to be responsible for the remaining 45%. The contract also included a provision to review and adjust the cost sharing on a recurring interval using several parameters based on usage from each City. The GJJSC has been modified several times since 1964. The cities now share costs equally.

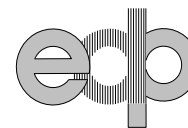
The operation and maintenance of the GJJWTF and trunk line is provided by the JSB. The JSB consists of 6 members with 3 members appointed from each City (September 1986 Amendment to GJJSC). Members of the JSB are appointed by the Common Council of each City to 3-year terms. The JSB is responsible for setting rates and establishing rules and regulations for protection and care of the wastewater system.

Section 13 of the GJJSC contains one provision that has been a source of discussion for years. Section 13 is titled “Outside Users” and provides guidance on how sanitary sewer lines get extended outside either City. Section 13 states:

“The sewage treatment facilities provided for in this contract shall be limited to the corporate limits of the parties hereto, together with all outside user connections at the date hereof who are using the sewage system of either party hereto, so long as said present outside user connections are permitted or allowed and have permission of the applicable municipality. **No extension of the facilities hereby created shall be permitted outside the corporate limits of the parties hereto without the consent of the governing bodies of the parties hereto.** Such joint consent of the governing bodies of the parties hereto shall be by a three-fourths vote of the voting strength of the respective governing bodies. If either party hereto shall extend its corporate boundaries by annexation or any other method, such newly acquired land shall be entitled to the use of the facilities provided for herein upon said land becoming a part of one of the parties hereto.”

The GJJWTF operates with a staff of 25 employees; approximately 50% of the staff performs operation and maintenance of the facilities, 25% is involved with laboratory related testing and compliance, and 25% is involved with administrative work.

There are approximately 8,200 connections to the GJJWTF classified as residential and small commercial, 22 industrial users, and 80 outside users in the Town of Johnstown. Of the 8,200



connections, 5,065 (62%) are located in the City of Gloversville and 3,137 (38%) are located in the City of Johnstown.

2.7.1 Capacity Information

The GJJWTF treats wastewater through an activated sludge process with a bar rack and screens, a grit chamber, and primary and secondary clarifiers. The wastewater treatment facility has a peak hourly flow design capacity of 21.8 mgd and an average daily flow design capacity of 13.8 mgd. Although the average daily design capacity is 13.8 mgd, the current approved treatment capacity is 10.1 mgd. The average daily flow for the facility in the years 2012, 2007, and 2002 was 5.2 mgd, 5.8 mgd, and 6.0 mgd respectively. The facilities engineer notes that fluctuations in average daily flow are highly dependent on rainfall due to infiltration and inflow related issues. Wet weather flows at the facility reportedly approach 30 mgd.

The wastewater treatment facility is rated for average loadings for BOD₅, suspended solids, and TKN of 32,500 lb/day, 24,600 lb/day, and 9,800 lb/day respectively. In 2012 the average BOD₅ and suspended solids loadings were 10,285 lb and 14,767 lb or 32% and 60% of the design maximums respectively. Table 2-22 presents a summary of the treatment facility design parameters and historical loading.

Table 2-22: Gloversville Johnstown Joint Wastewater Treatment Facility Capacity Information

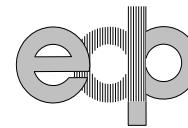
Parameter	2012	2007	2002	Design Capacity	Surplus Capacity ¹
Average Daily Flow (mgd)	5.2	5.8	6.0	13.8	8.6 (62%) ²
BOD ₅ (lb/day)	10,285	7,090	6,158	32,500	22,215 (68%)
Suspended Solids (lb/day)	14,767	11,082	9,739	24,600	9,833 (40%)
TKN (lb/day)	1,805	1,467	1,526	9,800	7,997 (82%)

1. Based on 2012 loading.

2. Surplus average daily flow based on the facilities design capacity (13.8 mgd). The approved treatment capacity is currently lower at 10.1 mgd leaving a surplus capacity of 4.9 mgd or 49%.

2.7.2 Rate and Financial Information

Fees charged by the JSB are based on flow, BOD, suspended solids, and TKN; however, for residential and small commercial customers, flow (water meters) is the only measured parameter and typical multipliers are used to calculate BOD, suspended solids and TKN. For the 22 industrial users within the system, GJJWTF personnel sample the wastewater from these facilities several times per month. These users are charged based on their monthly average flow, BOD, suspended solids and TKN.



The wastewater rate of the GJJWTF includes components for operation and maintenance, capital improvement, and infiltration and inflow remediation. The operation and maintenance and capital improvement charges are included in a volume based / usage fee which was \$2.39 per 1000 gallons for 2012. The infiltration and inflow fee is a flat fee per connection which was \$21.60 for 2012. The operation and maintenance and capital improvement rate has remained relatively consistent for the past 20 years varying from a low of \$2.17 per 1000 gallons in 2000 to a high of \$2.63 per 1000 gallons in 2007 with an average of \$2.42 per 1000 gallons since 1992. The rate is adjusted year to year as necessary to balance the annual budget.

Billing and collection of wastewater charges is handled by the respective Cities. In addition to the GJJWTF charges, each City adds a wastewater maintenance fee to raise revenue to pay for their operation and maintenance costs of the sewer collection systems within each City. The current wastewater maintenance fees are \$0.60 per 100 CF for industrial users and \$0.70 per 100 CF for residential users within the City of Gloversville and \$0.25 per 100 CF for usage under 200,000 CF and \$0.20 per 100 CF for usage over 200,000 CF in the City of Johnstown.

As previously noted, for the purposes of comparing rates between municipalities, annual wastewater charges were calculated within each municipality on the basis of a typical family using 100 gallons per day per capita for a total of 242 gallons per day.

At a usage of 242 gallons per day the annual service charge for a typical residential user would be \$232.71. This includes a flat fee of \$21.60 per service connection as well as the operation and maintenance and capital improvement charges of \$2.39 per 1000 gallons. The annual service charge of \$232.71 calculated above does not include sewer maintenance fees assessed by the two Cities. For an outside user, using the same 242 gallons per day, the annual service charge is double the in district rate at \$465.42.

The GJJWTF operates with an annual budget of approximately 4.5 million dollars (2012). The annual budget includes roughly \$415,000 (9%) in administration costs, \$820,000 (18%) in employee benefits, \$2,800,000 (62%) in plant operations, \$393,000 (9%) in compliance testing and monitoring and \$95,000 (2%) in insurance fees and contingency.

2.7.2.1 Relevant Legal Documents / Contracts

The Gloversville Johnstown Joint Wastewater Treatment Facility was formed through an agreement between the Cities of Gloversville and Johnstown dated May 1964. Since that time the agreement has undergone a number of revisions and amendments. Copies of the original GJJSC and eleven (11) available amendments have been included within Appendix A.



2.8 Fulton County Water District #1

Fulton County Water District #1 (FCWD#1) was established in 2005 to provide water service to the Fulton Montgomery Community College, HFM BOCES, and the Fulton County Airport.

Water system distribution infrastructure within FCWD#1 includes a booster pump station, a 200,000 gallon elevated water storage tank, and approximately 23,000 ft of 12 inch watermain all necessary to provide water service from the City of Johnstown City Limits along NYS Route 67 to the Fulton Montgomery Community College Campus.

Figure 2-6 includes a schematic of the FCWD#1 distribution system infrastructure including the booster pump station, water tank, and route of the 12 inch watermain from the City of Johnstown along NYS Route 67 to the Fulton Montgomery Community College. Figure 2-6 also shows the lands included within the FCWD#1 including the Fulton County Airport (approximately 284 acres) and the Fulton Montgomery Community College / BOCES Campus (approximately 91 acres).

Water supplied to FCWD#1 comes from the City of Johnstown. In 2004, the City of Johnstown and Fulton County executed a Water Supply Agreement that authorized the City to supply up to 40,000 gpd on a 30 day rolling average the FCWD#1. A copy of the Water Supply Agreement between the City of Johnstown and the FCWD#1 is included within Appendix A.

The FCWD#1 is responsible for the operation and maintenance of its distribution system infrastructure and is responsible for metering and billing its customers. The FCWD#1 purchases water from the City of Johnstown at the City's outside user rate. The outside user rate is set at twice the rate charged within the City and is currently \$5.06 per 100 cubic feet. The FCWD#1 adds a surcharge of \$4.76 per 100 cubic feet to cover administrative and operation and maintenance costs. The rate charged to users within the FCWD#1 district is \$9.82 per 100 cubic feet (\$5.06 + \$4.76).

The FCWD#1 is operated by a certified Water Operator employed by the Fulton County Department of Highways and Facilities.

FCWD#1 currently provides service to only four (4) customers; the Fulton Montgomery Community College, HFM BOCES, FBO Building at the Fulton County Airport, and a restaurant building at the Airport. Water usage within the FCWD#1 has remained relatively consistent since the first full year of usage in 2008. Total water usage within the FCWD#1 ranged from a low of 4.75 million gallons per year (13,000 gpd) in 2006 to a high of 6.40 million gallons per year (17,500 gpd) in 2010 with an average usage of 15,940 gpd over the 5 year period. We note that the average usage of 15,940 gpd is approximately 40% of the maximum allowable daily average available for purchase (40,000 gpd) from the City of Johnstown.

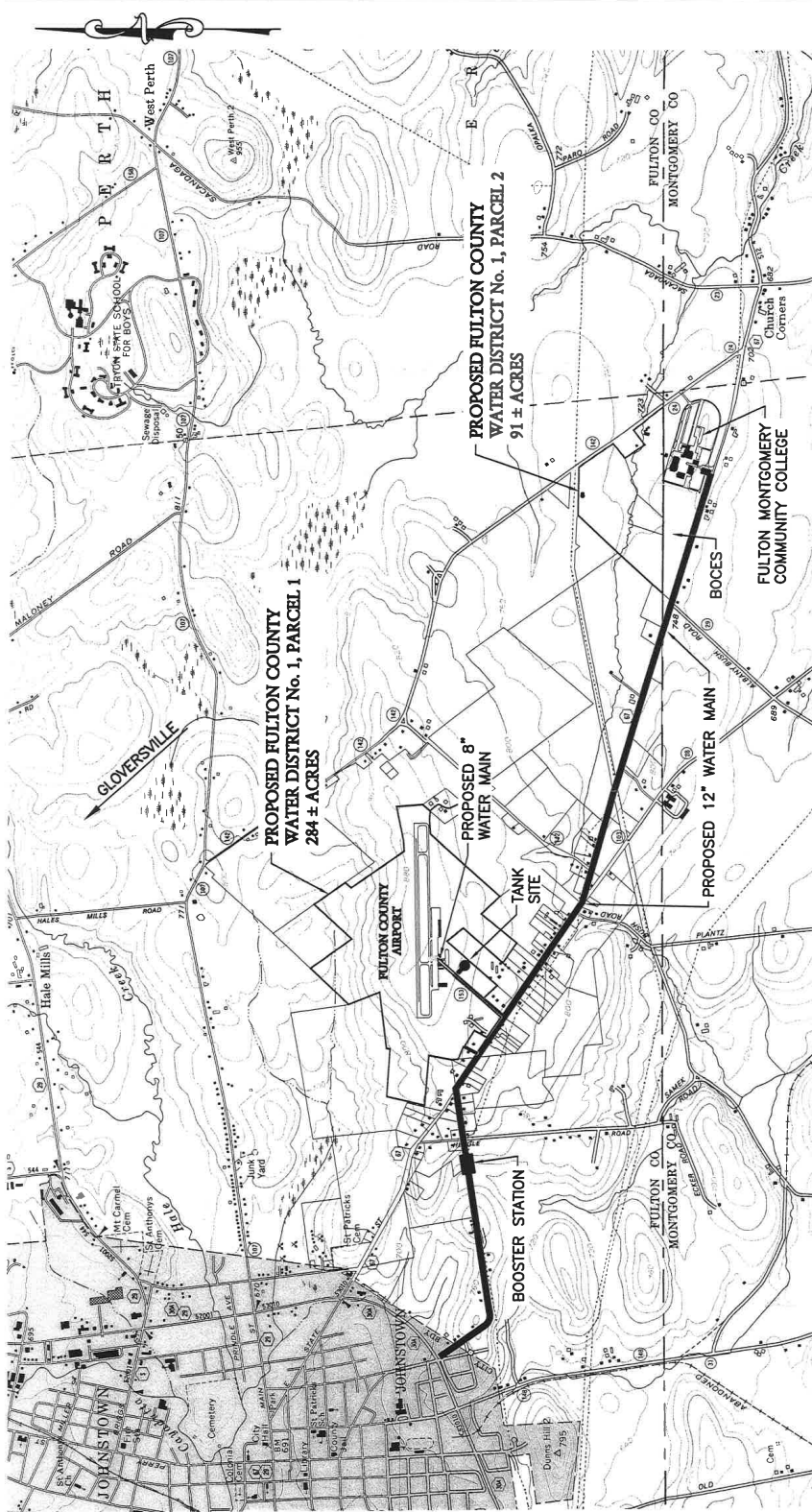


Although the FCWD#1 does not currently provide service to any residential customers, for comparison purposes, annual water charges were calculated on the basis of a typical family using 100 gallons per day per capita for a total of 242 gallons per day. **At a usage of 242 gallons per day, the annual service charge for a residential user in FCWD#1 would be \$1,159.63.**

FULTON COUNTY WATER DISTRICT No. 1

NOT TO SCALE

FIGURE:
2-6



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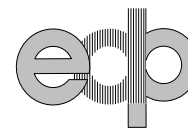
PROPOSED 8" WATER MAIN
PROPOSED 12" WATER MAIN

PROJ. ENGR JKF
DRAWN BY: MES
CHECKED BY: JKF

MARK DATE DESCRIPTION
ISSUE BLOCK

**PROPOSED
FULTON COUNTY
WATER DISTRICT No. 1
FULTON COUNTY, NEW YORK**

SHEET TITLE: OVERALL SITE PLAN
PROJECT NO: 23171.000 SCALE: 1"=200' DATE: JUNE, 2003 EXHIBIT A



2.9 Fulton County Sewer District #1

Fulton County Sewer District #1 (FCSD#1) was formed in 2005 at the same time as the formation of the Fulton County Water District #1 with the purpose of serving the same geographic area with wastewater service. A detailed wastewater collection and conveyance system was designed along NYS Route 67 to convey flow from the Fulton Montgomery Community College, HFM BOCES, and the Fulton County Airport to existing wastewater collection piping in the City of Johnstown and ultimately the GJJWTF. However, for various reasons, no wastewater infrastructure has ever been installed within FCSD#1.

2.10 Fulton Montgomery Community College Wastewater Treatment Facility

Wastewater from the Fulton Montgomery Community College (FMCC) and HFM BOCES facility is treated within a wastewater treatment plant, constructed in 1967, located on the FMCC campus. FMCC owns and operates the plant. The wastewater treatment plant includes a comminutor at the headworks of the facility followed by an extended aeration activated sludge process and tertiary sand filtration.

FMCC had planned to make a connection to Fulton County Sewer District #1 (FCSD#1) upon the formation of FCSD#1 in 2005. However, as noted in the previous section, infrastructure associated with the FCSD#1 was never constructed and, as a result, FMCC continues to operate their wastewater treatment facility.

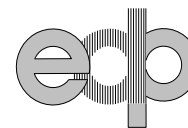
A study of the wastewater treatment facility entitled "FMCC Wastewater Facilities Capacity Study" by Steven E. Smith Civil & Architectural Engineering was completed in April 2010 as FMCC considered additional student housing at the Campus View property adjacent to the College. The 2010 Study referenced the wastewater treatment plant capacities, according to FMCC's 1978 SPDES permit, as having a maximum daily average flow on a monthly basis of 50,000 gpd, maximum BOD₅ of 5 mg/l and maximum suspended solids of 10 mg/l.

The 2010 study reviewed wastewater flows for 2009 and concluded that average daily sewer flow for 2009 would be approximately 18,100 gpd during the academic term of the College. Anticipated growth attributed to the BOCES campus and Campus View housing project was projected at the time to result in a 7,900 gpd increase in wastewater flows. Applying the additional flow would indicate a future average daily flow of 26,000 gpd.

With a permitted capacity of 50,000 gpd and a projected usage of 26,000 gpd (52% of the rated capacity) it would appear that the existing FMCC wastewater treatment facility has some capacity available to receive additional wastewater flows. However, the 2010 study noted that



operational issues, primarily attributed to excessive grease in the system, and undersized tertiary sand filters as a limit to the practical ability of the facility to increase flows. The 2010 study recommended replacing and upsizing the sand filters at the wastewater treatment plant and the installation of properly sized grease traps within the collection system.



3. EXISTING REGIONAL WATER AND WASTEWATER SYSTEMS IN NEW YORK STATE

Environmental Design Partnership (EDP) was charged with assessing and evaluating the feasibility of Fulton County creating a regional water and wastewater system. As part of its evaluation, EDP collected and reviewed information from existing regional water and wastewater systems currently operating in New York State. Site visits were conducted to personally meet with representatives of a number of regional systems. These site visits provided outstanding opportunities to learn detailed information about these existing regional systems. Travis Mitchell, EDP, Scott Henze, Planner, and Jim Mraz, Planning Director, participated in these site visits. Information, data and maps were collected and detailed notes were prepared for each visit.

A significant amount of information and understanding was obtained from these site visits, phone calls and review of online information. Based upon EDP's review of this information, several key findings were identified as outlined below.

FINDINGS

- A. There are numerous regional water and wastewater systems currently operating in New York State.
- B. Regional water and wastewater systems were created to:
 - 1. Promote land development.
 - 2. Promote SMART Growth.
 - 3. Address specific water and wastewater issues in a region.
- C. There are two (2) administrative structures used in regional water and wastewater systems:
 - 1. Systems administered by County government.
 - 2. Systems administered by a County Authority.
- D. The administrative structure selected for a particular regional system was determined to be best for that system.
- E. There are a variety of operational structures used in regional systems including operating a system through the use of coordinated Inter-municipal Agreements.
- F. Counties that chose the administrative structure using a County Authority were able to successfully create the Authority.
- G. Some regional systems provide services throughout a County while others provide services in only a portion of a County.
- H. Regardless of the administrative structure used for a regional water and wastewater system, special districts or zones of assessment must be created to define geographic limits of the service provided.
- I. The use of groundwater wells as a source of municipal water supply is widespread.

In addition to conducting site visits, information was collected and reviewed regarding other existing regional water and wastewater systems. Figure 3-1 identifies the regional water and wastewater systems that EDP either visited or researched in detail for this Report.

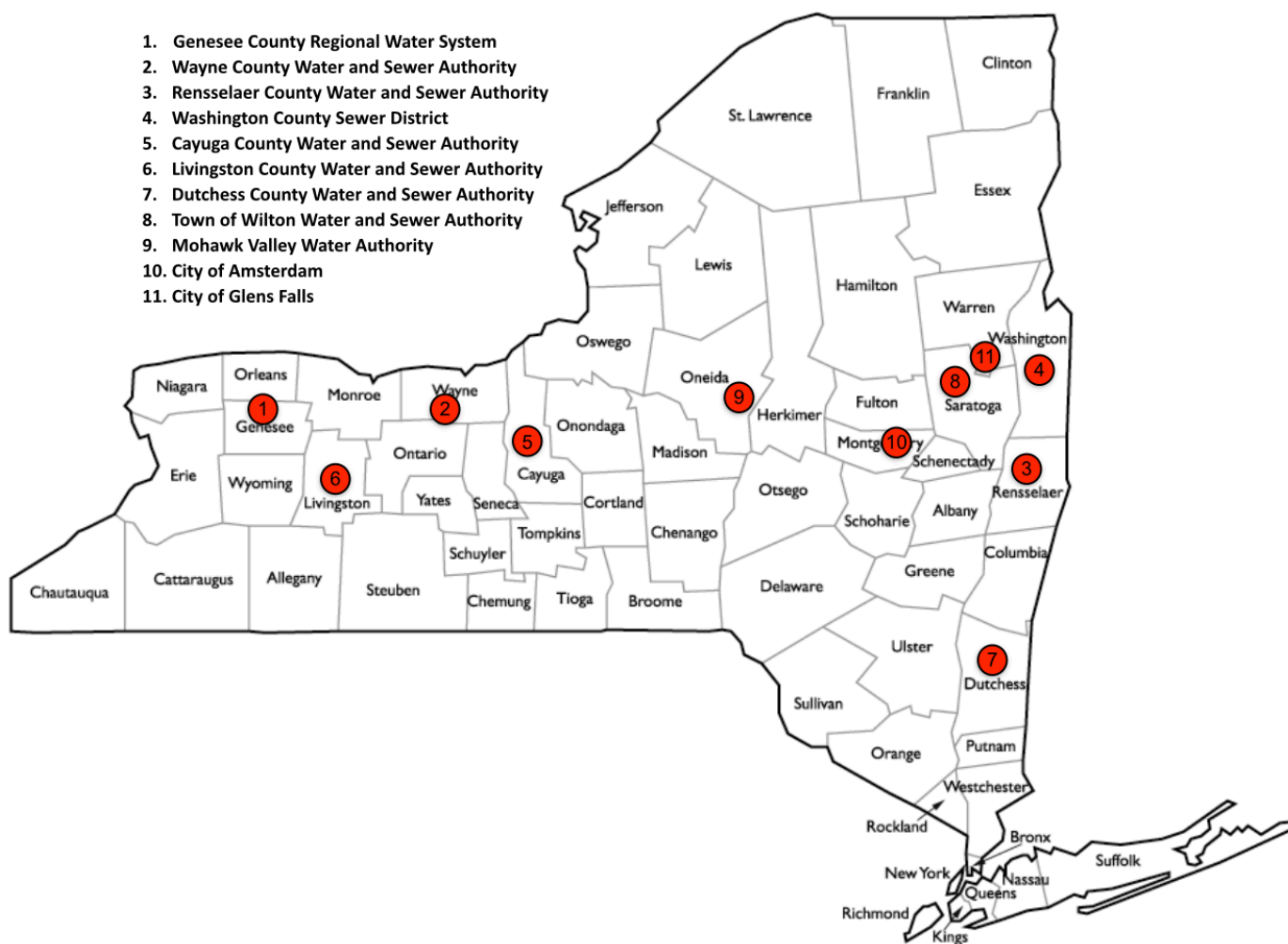
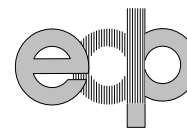


Figure 3-1: Location of Regional Water and/or Wastewater Systems Researched for SMART Waters



In addition to the eleven regional systems identified in Figure 3-1 that were visited and/or researched in detail, there are a number of other regional water and wastewater systems known to exist in New York State. These additional regional systems include 6 county water authorities, 1 county sewer authority, 7 non-county wide water and/or sewer authorities, and 15 county sewer districts as shown below:

NYS County Water Authorities

- Cayuga County
- Dutchess County
- Erie County
- Livingston County
- Monroe County
- Onondaga County
- Orange County
- Rensselaer County
- Saratoga County
- Suffolk County
- Wayne County

NYS County Sewer Authorities

- Cayuga County
- Dutchess County
- Livingston County
- Nassau County
- Rensselaer County
- Wayne County

Non-Countywide Water and/or Sewer Authorities

- Albany Water Board
- Buffalo Sewer Authority
- Clifton Park Water Authority
- Great Neck North Water Authority
- Mohawk Valley Water Authority
- New York City Water Board
- Niagara Falls Water Board
- Wilton Water and Sewer Authority

County Sewer Districts

- Albany County
- Chemung County
- Erie County
- Herkimer County
- Kings County
- Monroe County
- Nassau County
- Oneida County
- Onondaga County
- Orange County
- Richmond County
- Rockland County
- Saratoga County
- Suffolk County
- Washington County
- Westchester County



EDP's research determined that two basic structures are utilized within which regional systems operate:

1. County Administered
2. County or Regional Authority

As the name implies, County Administered regional systems have the county as the governing body. In most systems operated under this structure, the county takes an active role in the administration and operation and maintenance of water and/or wastewater services. In some County Administered systems, the county is more passive in their role and works as a coordinator of inter-municipal agreements between water and/or wastewater suppliers.

County or Regional Authorities are separate and distinct from local government; authorities are created under the Public Authorities Law. A county creates an authority and the State Legislature must also approve the creation. Authorities have their own board to oversee the operation. Authority Board members are typically appointed by the County Board of Supervisor's or Legislature that created it. Authorities have their own budgets and staff.

As with County Administered systems, most regional authorities take an active role in the administration and operation and maintenance of water and/or wastewater services. However, there are systems in which the regional authority works simply as a coordinator of inter-municipal agreements between other water and/or wastewater suppliers.

The following sections identify various examples categorized by the basic structure under which they operate.

3.1 County Administered Systems



3.1.1 Washington County Sewer District

Key Facts

County Population: 63,216		Land Area: 836 sq. mi.	
Local Governments: 9 Villages, 17 Towns and 2 Hamlets			
Services Provided			
Water Not Provided	Wastewater (collection and treatment)		
	Service Area: 2 Districts serving only a portion of the County		
	Population Served: 15,000 +/-		
	Design Capacity: 2.28 mgd		
	Average Daily Flow: 1.8 to 2.4 mgd		
	Annual Cost per Family ¹ : \$525		
	Annual Cost per Family ¹ : \$468.60		
	Organizational Structure:	7 member Board of Commissioners	
	Staffing:	Full time staff of 12	
	Additional Information: <ul style="list-style-type: none">District is a County Special Improvement DistrictDue to County Special Improvement District the District Ad Valorem tax is subject to the Washington County tax cap		

1. Annual charges based on single family residence using 242 gpd consistent with Fulton Co. rate analysis.

3.1.1.1 Background

- Washington County has a 2010 population of 63,216.
- Washington County is located in eastern New York bordering Vermont.
- Washington County has a total area of 846 square miles with 836 square miles of land and 10 square miles of water.
- Washington County is governed by a Board of Supervisors.



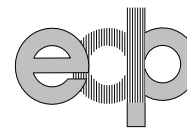
- There are 26 governments in Washington County:
 - 0 Cities
 - 9 Villages: Argyle, Cambridge, Fort Ann, Fort Edward, Granville, Greenwich, Hudson Falls, Salem and Whitehall
 - 17 Towns: Argyle, Cambridge, Dresden, Easton, Fort Ann, Fort Edward, Granville, Greenwich, Hampton, Hartford, Hebron, Jackson, Kingsbury, Putnam, Salem, White Creek and Whitehall
 - Hamlets: East Greenwich and Shushan

3.1.1.2 Creation and Purpose

There are two (2) sub-County Sewer Districts in Washington County that were created by Washington County Board of Supervisors.

- 1) Washington County Sewer District No. 1 (WCSD No. 1) was created in the 1970's and included only a small area near the Warren County Airport. The District contains only approximately 25 customers. There was a small treatment plant that was operational there for years and has since been discontinued. All wastewater collected in that District is now pumped to the City of Glens Falls' wastewater treatment plant.
- 2) Washington County Sewer District No. 2 (WCSD No. 2) was created in the mid 1980's. It was created for the Village of Hudson Falls, Village of Fort Edward and a portion of the Town of Fort Edward. The two (2) Villages at that time owned and operated sewer collection systems that discharged directly into the Hudson River. The two (2) Villages were directed by NYSDEC to stop discharging effluent directly into the Hudson River and to develop and operate a wastewater treatment plant. As a result, WCSD No. 2 was created in the mid 1980's. At the time of District formation, adjacent properties in the Town of Fort Edward were invited to join the District. The geographic area of this Sewer District includes the Village of Hudson Falls, Fort Edward and a portion of the Town of Fort Edward. At that time, the existing sewer collection systems were given over to WCSD No. 2.

Washington County Sewer Districts 1 and 2 only serve a portion of Washington County.



3.1.1.3 Organizational Structure

WCSD No. 2 is managed by a 7-member Board of Commissioners consisting of the following:

- Three (3) members include the Mayors of the two (2) Villages and Supervisor from the Town of Fort Edward.
- Three (3) members are at large appointments. Each municipality in the District appoints one (1) at large member.
- One (1) member is appointed by the Town of Kingsbury.

The District has an administrative staff of 12 comprising the following:

- 1 Executive Director
- 1 Senior Account Clerk
- 5 Water Treatment Plant Operators
- 4 Sewer Collection System Operators
- 1 Compost Operator

Washington County does not have a regional water system.

3.1.1.4 Wastewater Services

There are approximately 15,000 people in WCSD No. 2.

Wastewater Collection System:

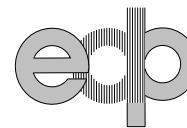
- Sewer Districts 1 and 2 own and maintain all interceptor and collection sewer lines in the municipalities it serves.
- Sewer District #2 owns approximately 80 miles of sewer lines.

Wastewater Treatment:

- WCSD No. 2 owns and operates a wastewater treatment plant. The plant was constructed at the southern end of the Village of Fort Edward on the east bank of the Hudson River. The plant became operational in 1988. Its design flow is 2.28 million gallons a day. The plant's operating permit calls for it to treat 2.5 million gallons a day. This is based upon a 12-month rolling average.
- Average daily flow to the plant is between 1.8 and 2.4 million gallons per day.

Wastewater Pump Station:

- Sewer District #2 owns and operates eight (8) sewer pump stations and 20 grinder pumps.



Sewer Rates:

WCSD No. 2 has both in-District and out-of-District sewer rates:

1. In-District Rates:

Basic Fee:	\$5.03/1,000 gallons of water usage
Ad Valorem Tax:	\$0.91/1,000 gallons

2. Out-of-District Rates:

Basic Fee:	\$5.03/1,000 gallons of water used
Surcharge:	Not provided
Ad Valorem Tax:	\$0.91/1,000 gallons

WCSD No. 2 receives water meter ratings from the individual municipalities. The Villages of Hudson Falls and Fort Edward and the Town of Fort Edward actually had water meters to determine actual water consumption. Those meter readings are provided to the Sewer District. The Sewer District then charges users for only 80% of the metered water usage. The 20% discount is for water used but does not go down the sewer. WCSD No. 2 is in the process of changing that amount from 80% to 90%.

The Ad Valorem Tax is used to pay off debt service only. This tax is supposed to fluctuate with the amount of debt service the Sewer District has. However, the amount of revenue generated by this Ad Valorem Tax has remained constant over the last 25 years despite the fact that the amount of Debt Service outstanding for the Sewer District has been constantly declining.

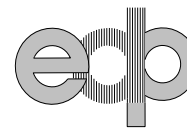
Anyone in WCSD No. 2 that is connected to the sewer system pays the O & M Fee. There are a few parcels in the District that are not connected to the sewer system so therefore they do not pay O & M Fees. All parcels in the Sewer District pay the Ad Valorem Tax.

3.1.1.5 Relevant Agreements

WCSD 2 has no formal agreements within municipalities who have in or out-of-District users. The District has individual user agreements with each customer.

3.1.1.6 Additional Information

The Ad Valorem Tax issued by the Sewer District is subject to the Washington County tax cap because the Sewer District is a County Special Improvement District.



3.1.2 Genesee County Regional Water System

Key Facts

County Population: 60,079		Land Area: 494 sq. mi.
Local Governments: 1 City, 7 Villages and 13 Towns		
Services Provided		
Water		Wastewater
Service Area:	All of Genesee Co.	Service Not Provided
Source(s) of water:	City of Batavia	
	MCWA	
	ECWA	
Organizational Structure:	County Highway Superintendent is responsible for administering and managing the system of inter-municipal agreements	
Staffing: 3 County Employees		
Additional Information:		
<ul style="list-style-type: none">• Genesee Co. uses a system of coordinated inter-municipal agreements.• Regional system purchases water at wholesale rates of \$2.10, \$2.12, and \$4.00 from City of Batavia, MCWA and ECWA respectively.• Genesee Co. adds a \$0.60 surcharge on all water bills.• Each Town creates its own water districts.		

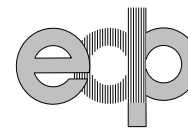
3.1.2.1 Background

- Genesee County has a 2010 population of 60,079.
- Genesee County is located in western New York.
- Genesee County has a total area of 495 square miles of which 494 square miles is land and only 1 square mile of water.
- Genesee County is governed by a County Legislature with 12 members.
- There are 21 governments in Genesee County:

1 City: Batavia

7 Villages: Alexander, Altica, Bergen, Corfu, Elba, LeRoy, Oakfield

13 Towns: Alabama, Alexander, Batavia, Bergen, Bethany, Byron, Darien, Elba, LeRoy, Oakfield, Pavilian, Pembroke, Stafford



Genesee County is the only Regional Water System we researched that operates exclusively through the use of Coordinated inter-municipal agreements. The County does not operate any of the water system infrastructure or control their own source capacity.

3.1.2.2 Creation and Purpose of Genesee County Regional Water System (GCRWS)

- Genesee County created a regional water system in 1997 as part of a Strategic Plan.
- A key component to creating Genesee County's Regional Water System was the City of Batavia agreeing to have Genesee County lease the City's water supply and treatment system.
- In return for leasing its water filtration plant to Genesee County, the City executed several agreements with Genesee County:

a. Lease Agreement:

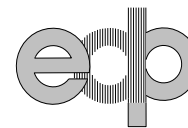
Under this Lease Agreement, the City leased the water filtration plant to Genesee County. In return, Genesee County pays the City of Batavia \$550,000 a year. The current lease is for ten (10) years and expires in 2018.

b. O & M Agreement:

Under this Agreement, Genesee County contracts with the City of Batavia to continue to operate and maintain the water filtration plant. Genesee County pays the City of Batavia's operation and maintenance expenses.

c. Sales Tax Agreement:

The City of Batavia executed a new Sales Tax Distribution Agreement with Genesee County. Prior to doing so, the City of Batavia had preempted itself from the County's Sales Tax Agreement. At that time, the County Sales Tax Agreement stipulated that Genesee County retained 50% of all sales tax receipts it received and the other 50% was distributed to the towns and villages in Genesee County. An analysis was done of the City of Batavia's sales tax receipts to determine what percentage of the total County sales tax revenue receipts the County distributed to Towns and Villages would have been if the City was a party to the Agreement. It was determined that if the City was participating in a County Sales Tax Agreement, they would be receiving 13% of the 50% that Genesee County distributes back to all municipalities in the County. The City agreed to terminate its preemption and return to being a party to the County's Sales Tax Agreement. In return for getting out of its preemption and rejoining the County's Sales Tax Agreement, Genesee County agreed to give the City of Batavia 16% of the sales tax revenues it distributes to all municipalities in Genesee County. As a result, the City effectively increased its share of the 50% distributed by the County by 3 percentage points.



- The cumulative impact of these Agreements resulted in positive financial impacts to the City of Batavia.
- To address concerns about sprawl occurring in the County, the County adopted a Smart Growth Plan.

1. Coordinated Inter-municipal Agreements:

- Genesee County did not create a Water Authority or County Water District for its regional water system.
- Genesee County operate and manages its regional water system through the use of Inter-municipal Agreements.
- Genesee County coordinates the administration and management of numerous Inter-municipal Agreements.
- There is no separate department or staff to administer and manage their Inter-municipal Agreements. The County's Superintendent of Highways is responsible for administering and managing the Agreements.

2. Service Area:

- The GCRWS can provide water service anywhere in Genesee County.

3. Sources of Water:

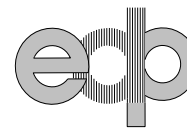
- GCRWS obtains its water from three (3) sources:
 - 1) It leases the City of Batavia's water supply and treatment system.
 - 2) Purchases water from the Monroe County Water Authority (MCWA).
 - 3) Purchases water from the Erie County Water Authority (ECWA).

4. Ownership of Infrastructure:

- City of Batavia owns and operates the water distribution system in the City.
- Monroe County Water Authority owns and maintains all water lines outside the City of Batavia except for a few Villages in which the Village owns and maintain the lines.
- Genesee County contracts with the City of Batavia to operate and maintain their water treatment plant.

5. Water Rates:

- Water rates vary in Genesee County depending upon the source of supply. The following are the 2013 base water rates from the three (3) sources of supply:
 1. City of Batavia : \$2.10 per 1,000 gallons
 2. MCWA : \$2.12 per 1,000 gallons
 3. ECWA: \$4.00 per 1,000 gallons



- Each of these rates are set by the appropriate Authority. The MCWA and ECWA set their own rates. Genesee County sets the rate for the City of Batavia.
 - The \$2.12 and \$4.00 rates for MCWA and ECWA produce revenues that go directly to those respective Authorities.
 - In addition to these Base Rates, a \$.60 per 1,000 gallon surcharge is added on to all water bills. This \$.60 surcharge goes directly to Genesee County.
 - In addition to the Base Rate and Surcharge, each Town Water District may add an additional fee to cover any debt service payments a Water District may have as a result of debt incurred paying for the cost of installing water lines within its Water District.
 - Genesee County generates revenues from two (2) sources:
 1. The \$.60 surcharge added on to all water bills.
 2. The sale of all water in the City of Batavia.
 - The \$.60 surcharge Genesee County adds to all water bills is fixed for 40 years. It cannot change during this time period.
 - MCWA's rate of \$2.12 per 1,000 gallons includes their cost to operate and maintain the Water Distribution System as well as the debt service payment on the \$30 million of bonds issued for the initial capital construction project.
 - MCWA financed the cost of the Phase I Project. The total cost was \$30 million. Genesee County is responsible for the debt service payment on this bond. Genesee County pays for this with its \$.60 surcharge.
6. Town Water Districts:
- In order for the GCRWS to provide water service in a Town, a Town must create a Town Water District.
 - Each Town is responsible for creating, operating and managing their Town Water District.



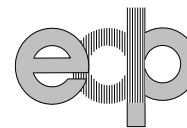
3.1.3 City of Amsterdam

The City of Amsterdam is obviously not a County Administered system; however, for the purposes of this report information regarding the City of Amsterdam has been placed in this Section.

Key Facts

2010 Population: 18,620		Land Area: 6.3 sq mi	
Services Provided			
Water		Wastewater	
Service Area: Entire City and surrounding Town of Amsterdam and Florida		Service Area: City and surrounding Towns of Amsterdam and Florida and the Villages of Hagaman and Ft. Johnson	
Population Served: 18,620 in City plus 1,250 +/- outside		Population Served: 18,620 in City plus 3,300 +/- outside	
Design Capacity: 10 mgd (supply) 14 mgd (treatment)		Design Capacity: 10 mgd	
Average Daily Flow: 5.5 mgd		Average Daily Flow: 8.3 mgd	
Peak Daily Flow: 6.8 mgd		Peak Flow:	
Source(s) of water: Surface supply with 2.9 billion gallons of storage			
Annual Cost ¹ : \$570.26		Annual Cost ¹ : \$555.99	
Organizational Structure: <ul style="list-style-type: none">• Division of the City DPW		Organizational Structure: <ul style="list-style-type: none">• Division of the City DPW	
Staffing: <ul style="list-style-type: none">• 12 full time, 2 seasonal		Staffing: <ul style="list-style-type: none">• 11 full time	
Additional Information: <ul style="list-style-type: none">• The City of Amsterdam supplies water to the Town of Amsterdam and the Town of Florida through inter-municipal agreements. The Town's pay the City 1.5 times the City rate.• The City of Amsterdam and Town of Florida maintain an inter-municipal agreement under which the Town pays the City a revenue sharing payment calculated based on growth in sales tax revenue.			

2. Annual charges based on single family residence using 242 gpd consistent with Fulton Co. rate analysis.



3.1.3.1 Background

- City of Amsterdam had a 2010 population of 18,620.
- The City of Amsterdam has a total area of 6.3 square miles of which 5.9 square miles of it is land and .3 square miles of it is water.
- The City of Amsterdam's government consists of a city council and a mayor. The mayor is elected in a citywide vote. The council consists of five members each elected from wards.

3.1.3.2 Water Services

Source of Supply:

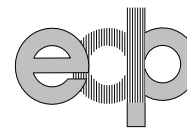
1. The City of Amsterdam utilizes three (3) reservoir impoundment areas, located in the Saratoga County Towns of Providence and Edinburg, as their source of water:
 - Steele Reservoir - 1.2 Billion Gallons - 50 feet deep
 - Ireland Valley Lake - 1.2 Billion Gallons - 30 feet deep
 - Round Lake- 500 Million Gallons - shallow
2. A 100 year old 24" to 30" main line runs approximately 13 miles from a coarse filtration plant located near the reservoirs to the City's Water Treatment Plant.

Water Distribution System:

1. There are roughly 8,000 – 9,000 service connections throughout the distribution system.
2. There are approximately 500 commercial connections within the City of Amsterdam. All commercial connections are metered.
3. Four (4) family and larger residential units have a choice of either a flat water rate or a metered rate.

Water Consumption:

1. The water system's average daily flow was 5.5 mgpd with a peak day of 6.8 mgpd (2012 data).
2. The water supply reservoirs reportedly have a safe yield of 10 mgd. This value was published in a report from 1980's and there are questions whether the system can still deliver those flows.



Water Filtration Plant:

1. The Water Filtration Facility has been upgraded in recent years to include upflow clarification, filtration and final treatment through a carbon filtration prior to distribution. The Water Filtration Facility is rated for a treatment capacity of 14 mgpd.
2. Water clarity impacts the capacity of the Filtration Plant.

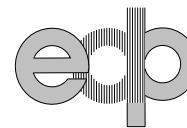
Water Treatment Personnel:

- 3 personnel at watershed properties
- 6 Water Treatment Operators
- 1 Lab Technician
- 1 Senior Operator
- 1 Superintendent
- 2 seasonal employees

Total - 12 Full Time Employees
- 2 Seasonal

Town of Amsterdam Water Districts Served by the City of Amsterdam:

1. There are eight (8) Water District/Service Areas within the Town of Amsterdam as follows:
 - a. Harrower Water District (1950)
 - b. Route 30 Water District (1996)
 - c. Route 30 Water Service Area (1996)
 - d. Route 30 Water District Ext. 1 (2002)
 - e. Route 30 & Wallins Corners Road Water District (2003)
 - f. Route 30 Water District Ext. 3 (2007)
 - g. Route 30 Water District Ext. 4 (Phase I) (Estimated Construction 2009)
 - h. Route 30 Water District Ext. 4 (Phase II)
2. There is City-owned master water meter located at the boundary between the City of Amsterdam and the Town of Amsterdam. There are roughly 450 connections within the Town of Amsterdam (all connections are metered) and that the Town of Amsterdam does all the reporting to the NYSDOH and maintenance within their distribution system.
3. The Town of Amsterdam owns and maintains the distribution system from the master meter into the Town of Amsterdam.
4. The Town of Amsterdam pays the City at 1½ times the in-City rate.



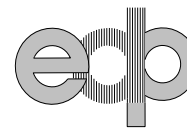
Town of Florida Water District:

1. There is City-owned master water meter located at the boundary between the City of Amsterdam and the Town of Florida. There are 45 connections within the Town of Florida (all connections are metered) and that the City of Amsterdam provides the monthly reporting to the NYS DOH for the Town of Florida.
2. By the City providing the monthly reporting to NYSDOH, the Town of Florida does not have to staff a Licensed Water Operator.
3. The Town of Florida owns and maintains the distribution system from the master meter into the Town of Florida.
4. The Town of Florida pays the City of Amsterdam 1½ times the in-City rate.

3.1.3.3 Wastewater Services

Collection System:

1. All collection mains located within the City are maintained by the City of Amsterdam's Department of Public Works.
2. The City collects and treats wastewater from all areas within the City and from four (4) areas outside the City as shown below:
 - a. City of Amsterdam:
Population served - 18,620.
Total length of collection system - 80 miles.
 - b. Outside City of Amsterdam:
 - 1) Town of Amsterdam:
Population served - 1,000
Total length of collection system - 5.5 miles
 - 2) Village of Hagaman:
Population served - 1,292
Total length of collection system - 10 miles
 - 3) Village of Fort Johnson:
Population served - 490
Total length of collection system - 5.2 miles
 - 4) Town of Florida:
Population served - 500



Total length of collection system - 5 miles

3. There are seven (7) Wastewater Service Areas within the Town of Amsterdam:
 - a. Route 30 Sewer Service Area
 - b. Route 30 Sewer Service Ext. No. 1 (Wallins Corners)
 - c. Route 30 Sewer Service Area Phase III (Country Ridge)
 - d. Route 30 Sewer Service Area Phase IV (Midline & Francisco Rds)
 - e. Route 30 Sewer Service Area Phase V (Log City Rd)
 - f. Route 30 Sewer Service Area Phase VI (Maple Ave Apts)
 - g. route 30 Sewer Service Area Phase VII (Golf Course Rd)

Wastewater Treatment Facility:

1. The City of Amsterdam owns and operates a wastewater treatment facility, three (3) major pump stations and several smaller pump stations.
2. The gravity collection system and smaller pumps stations are operated by the Department of Public Works while the wastewater treatment facility and three larger pump stations are operated by the Sewer Department.
3. The Wastewater Treatment Facility is permitted to treat 10 million gallons of effluent a day (20 million gallons per day under wet weather conditions).
4. The 2012 average daily flow at the wastewater treatment facility was 8.3 million gallons per day.
5. The City of Amsterdam, for some time, has been under a DEC consent order regarding issues with inflow and infiltration.

Wastewater Treatment Facility Staff:

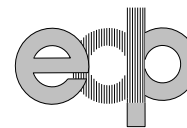
1. The City of Amsterdam employs one (1) director and ten (10) staff to handle the wastewater treatment facility.

3.1.3.4 Inter-municipal Agreements

The City of Amsterdam supplies municipal water to the Towns of Amsterdam and Florida. This service is provided through the adoption of Inter-municipal Agreements.

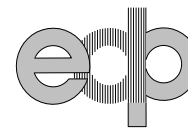
Town of Amsterdam Inter-municipal Agreement with City of Amsterdam:

- City agrees to sell up to 150,000 gallons per day of water to the Town.
- Town pays for all costs of water system improvements. Town owns all improvements in the Town.
- Town is responsible for all O & M on water improvements in Town.
- Town creates Water Districts.



Town of Florida Inter-municipal Agreement with City of Amsterdam:

- City agrees to provide water and sewer services as needed.
- Town pays for all costs of water system improvements. Town owns all improvements in the Town.
- Town is responsible for all O & M on water improvements in Town.
- Town creates Water Districts.
- The Town annually pays the City a revenue sharing payment in an amount equal to 20% of the difference in the Town's sale tax revenue actually received during its fiscal year less the threshold sales tax value initially to be fixed at \$713,693.00, which is the highest annual value of sales tax received by the Town in the three (3) years preceding the date of their Inter-municipal Agreement. This threshold remains unchanged for a period of ten (10) years. In the eleventh year, the threshold will be adjusted by multiplying the initial threshold number on the date that the distribution calculation is required to be computed by one (1) plus the value of the 12 Month Percent Change in the Consumer Price Index expressed as a decimal based on Annual Data for All Urban Consumers Not Seasonally Adjusted including All Items for the Northeast Urban Area as published by the United States Department of Labor Bureau of Labor Statistics. This is not a cumulative adjustment for inflation over the preceding ten year period. Thereafter, the threshold will be adjusted by multiplying the previous year's adjusted threshold value by one (1) plus the value of the 12 Month Percent Change in the Consumer Price Index expressed as a decimal based on Annual Data for All Urban Consumers Not Seasonally Adjusted including All Items for the National Urban Area as published by the United States Department of Labor Bureau of Labor Statistics.
- The Town's payment is calculated annually.
- The payments commenced on June 30, 2009 and shall continue through the 40-year term of their Agreement.



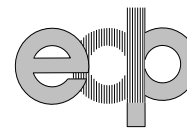
3.2 County or Regional Authorities

3.2.1 Wayne County Water and Sewer Authority

Key Facts

County Population: 93,772		Land Area: 604 sq. mi.	
Local Governments: 9 Villages and 15 Towns			
Services Provided			
Water		Wastewater	
Service Area: Authorized to provide service throughout County; currently serves a significant portion		Service Area: Authorized to provide service throughout County; currently serves only a small portion	
Population Served: 25,000			
Average Daily Use: 2.5 to 3.5 mgd			
Source(s) of water: Finish water purchased wholesale from neighboring Towns and Monroe County			
Annual Cost ¹ : \$421 +/- typical		Annual Cost ¹ : \$604 +/-	
Organizational Structure and Staffing			
<ul style="list-style-type: none">Authority governed by a 9 member Board of Directors appointed by the Chairman of the County Board of SupervisorsStaffing of the Authority includes 24 full time and 6 season employees			
Reason for Creation / Purpose			
<ul style="list-style-type: none">Comprehensive SMART growth plan for water supply in the County to satisfy development demands and deliver quality water supply.			
Annual Operating Budget (2013): \$5,238,040			
Additional Information:			
<ul style="list-style-type: none">The Authority purchases water at wholesale rates ranging from \$1.69 per thousand to \$2.25 per thousand gallons from neighboring sources (12 sources).Authority is flexible with respect to operating and maintaining existing systems; Villages and Towns have the option of continuing to maintain systems themselves or allowing the Authority to takeover.Wayne County reports experiencing commercial and residential growth in the portion of the County where infrastructure is located.			

1. Annual charges based on single family residence using 242 gpd consistent with Fulton Co. rate analysis.



3.2.1.1 Background

- Wayne County had a 2010 population of 93,772.
- Wayne County is located in western New York. It is part of the Rochester area and borders Lake Ontario.
- Wayne County has a total of 1,384 square miles of which 604 square miles is land and 780 square miles is water.
- Wayne County is governed by Board of Supervisors with 15 members.
- There are 24 governments in Wayne County:

0 Cities

9 Villages: Clyde, Lyons, Macedon, Newark, Palmyra, Red Creek, Sodus, Sodus Point, Walcott

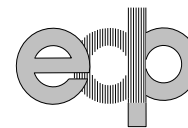
15 Towns: Arcadia, Butler, Galen, Huron, Lyons, Macedon, Marion, Ontario, Palmyra, Rose, Savannah, Sodus, Walworth, Williamson, Wolcott

3.2.1.2 Creation and Purpose

Water

Beginning in the early 1970's, Wayne County began exploring the possibility of creating a Regional Water System that would provide for its long-term needs and supplement the ability of existing individual Town and Village Systems to effectively deliver water. In 1985, the prior studies were reevaluated and projections were made on the long-term demand for water in the County. The Wayne County Water Authority was established in 1987 for three (3) reasons:

1. Wayne County wanted to make sure that they could meet the growth in industrial development demands. Wayne County had a significant vegetable canning industry that required a significant amount of water.
2. The Town's of Walworth, Marian, Macedon and Palmyra wanted to grow both residentially and commercially and understood that they would need to have a secure supply of water supply to do so.
3. In order to meet the local municipal demands for water in the County, Wayne County felt that it was in the best interest of all municipalities in the County to coordinate and manage the consolidation of water supply and transmission systems to plan future growth.



Wastewater

In 1990, the Wayne County Water Authority became the Wayne County Water and Sewer Authority because:

1. The Village of Fairhaven located in adjacent Oswego County and directly around Little Sodus Bay (Lake Ontario) had a Court order to find an alternate wastewater collection system because the Village's existing system was contaminating Little Sodus Bay.
2. The NYS Department of Corrections Facility at Butler Creek needed to replace their existing wastewater treatment plant. Rather than replacing the plant, the State agreed to contribute to the cost of constructing a new regional wastewater treatment plant that would satisfy the needs of the Correctional Facility, the Village of Fairhaven and others.

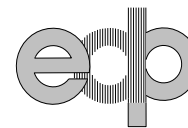
Wayne County explored the creation of either County Water and Sewer Districts or forming a County Water and Sewer Authority. Wayne County elected to create a Water and Sewer Authority because it felt creating Districts would be perceived as creating another layer of County government. Wayne County also did not wish to increase the County's workforce that would be needed to manage the operation of Water and Sewer Systems. The County believed that the creation of an Authority would shelter the management of the Water and Sewer infrastructure from the political process.

3.2.1.3 Organizational Structure

The Wayne County Water and Sewer Authority is governed by a 9-member Board of Directors appointed by the Chairman of the Wayne County Board of Supervisors and confirmed by the majority vote of the Board of Supervisors of Wayne County. Each member is appointed to a 3-year term. A key to success is diversity of the membership of the Board from Towns and Villages throughout the County.

The Wayne County Water and Sewer Authority is made up of the following:

Administration:	5 Administrative Personnel
Operations:	4
Wastewater Treatment Operators:	2 of which have water operator licenses
Superintendent of Public Works:	1
Field Employees:	12



- The Wayne County Water and Sewer Authority hires six (6) summer staff to perform routine maintenance to include painting of fire hydrants and mowing of grass.
- The Wayne County Water and Sewer Authority's adopted budget in 2013 is \$5,238,040.

3.2.1.4 Water and Wastewater Services

Service Area:

- The WCWSA is authorized to provide water and sewer services throughout Wayne County.

Sources of Water and Sewer:

- The WCW & SA obtains water from twelve (12) sources. The majority of sources are open water sources with filtration plants. The major sources are:
 - Monroe County Water and Sewer Authority: 334 million gallons per year (min)
 - Town of Ontario: 330 million gallons per year (min)
 - Town of Williamson: 100 million gallons per year
 - Village of Newkirk: 125 million gallons per year
- The Wayne County Water and Sewer Authority purchases between 2.5-3.5 million gallons of water per day.

Ownership of Infrastructure:

- The WCW & SA does not own any of the municipal filtration plants. Each municipality maintains ownership. The WCW & SA does own portions of the distribution system... Their ownership happens in one of two ways...The WCW & SA occasionally installs new water transmission mains to improve the overall system; second, the if/when the WCW & SA performs a major repair/maintenance (i.e., replacing pipe within the system) the replaced infrastructure becomes the property of the WCW & SA.
- The Wayne County Water and Sewer Authority enters into lease agreements with local municipal water wholesale suppliers to operate and maintain their treatment plants and infrastructure if they so choose. If the WCW & SA needs to perform major repair/replacement of infrastructure, the upgraded/replaced infrastructure becomes the property of the WCW & SA.



Water Rates:

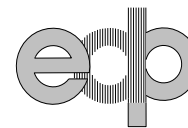
- The Authority determines the retail water rate by averaging the rates paid to the twelve (12) wholesale suppliers to create a flat water rate fee. The WCWA currently has approximately 10,000 individually metered retail water customers.
- The 2013 water rate was \$4.15.
- The Authority adds a base Operation and Maintenance Fee of \$17 to be paid on a quarterly basis or \$68/year. The average daily water usage of the 10,000 users is 2.5-3.5 million gallons/day.
- The wholesale rate the Authority buys water at varies by source. Some of the wholesale rates identified are:

MCWA:	\$1.92/1,000 gallons
Village of Newkirk:	\$1.69/1,000 gallons (lowest wholesale rate)
Highest Rate:	\$2.25/1,000 gallons (highest wholesale rate)

- The WCWA charges the same \$4.15/1,000 gallons retail rate to all customers in Wayne County despite these varying wholesale rates. Their retail rate is \$4.15/1,000.
- In addition, the Authority adds a \$17 per quarter charge onto all water bills. This totals \$68/year.
- In addition to the WCWA rate, each Town Water District may add an additional fee to cover any debt service payments a Water District may have as a result of debt incurred paying for the cost of installing water lines within its Water District.

Town Water Districts:

- In order for the WCW & SA to provide water service in a Town, a Town must create a Town Water District.
- Wayne County executes Inter-municipal Agreements with each participating Town.



3.2.2 Rensselaer County Water and Sewer Authority

Key Facts

County Population: 159,429		Land Area: 651 sq. mi.	
Local Governments:			
Services Provided			
Water		Wastewater	
Service Area: Portions of City of Rensselaer Town of East Greenbush		Service Area: Limited areas of the City of Troy City of Rensselaer	
Organizational Structure			
<ul style="list-style-type: none">5 member board appointed by County Executive and majority / minority political parties			
Reason for Creation / Purpose			
<ul style="list-style-type: none">Established in 1986 as a development tool			
Key Information:			
<ul style="list-style-type: none">Authority maintains a limited role in operation and maintenance of any infrastructure. The Authority has bonded infrastructure improvements on behalf of local municipalities and turns infrastructure back over to local municipality once bond is paid.Rensselaer County also has a County Sewer District which owns collection system piping and the wastewater treatment facility.			

3.2.2.1 Background

- Rensselaer County had a 2010 population of 159,429.
- Rensselaer County is located in eastern New York and borders Vermont.
- Rensselaer County has a land area of 665 square miles with 651 square miles of land and 11 square miles of water.
- Rensselaer County is governed by a County Legislature with 19 members.
- There are 24 local governments in Rensselaer County:

2 Cities: Rensselaer and Troy

5 Villages: Castleton-on-Hudson, East Nausau, Hoosick Falls, Nassau and Valley Falls

14 Towns: Averill Park, Berlin, Brunswick, East Greenbush, Grafton, Hoosick, Nassau, North Greenbush, Petersburg, Pittstown, Poestenkill, Sand Lake, Schodack, Stephentown

3 Hamlets: Hampton Manor, West Sand Lake, Wynantskill



3.2.2.2 Creation and Purpose

- A. The Rensselaer County Water and Sewer Authority (RCW&SA) was created in 1986. It was intended to be used as a tool to promote development in the County.
- B. The RCW&SA is empowered to provide retail water and sewer services throughout Rensselaer County except for the Cities of Troy and Rensselaer as they existed in 1986.

3.2.2.3 Organizational Structure

- A. The Authority is governed by a 5-member board.
- B. Three (3) members of the Authority are direct appointments of the Rensselaer County Executive.
- C. The majority and minority party leaders get to each appoint one (1) additional member for a total of five (5).
- D. There are several part-time staff persons operating the Authority. There is a part-time CEO and CFO, as well as a secretary. Technical assistance is provided by a local consulting engineer as needed.
- E. The total operating budget of the Authority is less than \$50,000. The Authority shares office space with the Rensselaer County Industrial Development Agency.
- F. Sewer District No. 1 answers to the Rensselaer County Legislature. Members of the District Board of Directors are appointed by the Rensselaer County Legislature.

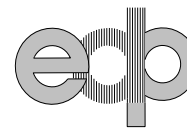
3.2.2.4 Water Services

Service Area:

- A. The Authority's primary service area for water is the City of Rensselaer and the Town of East Greenbush.

Sources of Water:

- A. The Authority gets its water from the City of Troy. The Authority does not have a formal agreement with the City of Troy. At present, they are purchasing approximately 3 million gallons per day.

**Ownership of Infrastructure:**

- A. The Authority does own some infrastructure. Most infrastructure is owned and maintained by the municipality that it is located in.
- B. The Authority executes O & M Agreements with these municipalities to perform these services.
- C. The Authority pays the municipalities for its costs of performing this O & M work. These costs are deducted against the total charge for water to these municipalities so that there is only a net payment being made by the municipalities to the Authority.
- D. The Authority does own miscellaneous infrastructure in North Greenbush as well as the infrastructure in East Greenbush that was paid for by the 2008 bonds.

3.2.2.5 Wastewater Services**Wastewater:**

- A. The Authority does not own a wastewater treatment plant. It owns some sewer infrastructure installed in 2008 as part of a bond issue.
- B. In addition to the RCW&SA, there is also the Rensselaer County Sewer District No. 1. This Sewer District was created in the early 1970's before the creation of the RCW&SA.
- C. Sewer District No. 1 does not encompass the entire County like the RCW&SA does.
- D. Sewer District No. 1 provides sewer services in areas around the Cities of Troy and Rensselaer.
- E. Sewer District No. 1 owns and operates a wastewater treatment plant located just south of Troy.
- F. Prior to the adoption of the Federal Clean Waters Act, existing sewer lines flowed from west to east and emptied directly into the Hudson River in the Cities of Troy and Rensselaer. As a result of the Clean Waters Act, an interceptor sewer line was run north-south in the Cities of Rensselaer and Troy to intercept all of those east-west running lines. The interceptor sewer line in the City of Troy flows south by gravity to the sewage treatment plant. Rensselaer County Sewer District No. 1 owns the inceptor sewers in the Cities of Rensselaer and Troy as well as the sewage treatment plant itself.

3.2.2.6 Additional Information**2008 Bond Issuance:**

- A. The RCW&SA issued approximately \$14.5 million in bonds in 2008 to finance water and sewer work in East Greenbush. Approximately half of these bonds were used



to pay for water system improvements and the other half for sewer system improvements.

- B. The infrastructure installed by the proceeds of these bonds are owned by the RCW&SA. Once these bonds are paid off, ownership will revert back to the Town of East Greenbush.

Other:

- A. The RCW&SA was mostly inactive between 1986 when it was created and 2008 when it issued bonds to finance certain water and sewer improvements.
- B. The following other municipalities in Rensselaer County own and operate water and/or sewer systems:

- | | |
|-----------------------------|------------------------------|
| • Village of Hoosick Falls: | Water and Sewer System |
| • Village of Schaghticoke: | Water System |
| • Village of Castleton: | Sewer System and Sewer Plant |
| • Town of Schodack: | Water System |
| • Town of East Greenbush: | Sewer System and Sewer Plant |



3.2.3 Cayuga County Water and Sewer Authority

Key Facts

County Population: 80,026		Land Area: 693 sq. mi.
Local Governments: 1 City, 4 Villages and 23 Towns		
Services Provided		
Water		Wastewater (collection and treatment)
Service Area:	Entire County	Service Area: Entire County
Source(s) of water:	City of Auburn Village of Fair Haven WCWSA	
Organizational Structure: <ul style="list-style-type: none">9 member Board of Directors		
Staffing: <ul style="list-style-type: none">2 full time and 4 part time positions		
Operating Budget: \$1,218,500 (2014)		
Additional Information: <ul style="list-style-type: none">Authority sells water to retail customers within Town Districts		

3.2.3.1 Background

- Cayuga County had a 2010 population of 80,026.
- Cayuga County is located in the Finger Lakes region. Owasco Lake is in the center of the county, and Cayuga Lake forms part of the western boundary. Lake Ontario is on the northern border, and Skaneateles Lake and Cross Lake form part of the eastern border.
- Cayuga County has a total area of 864 square miles of which 693 square miles is land and 170 square miles (19.74%) is water.
- Cayuga County is governed by a County legislature consisting of 15 members.
- There are 28 governments in Cayuga County:

1 City: Auburn

4 Villages: Aurora, Cato, Meridan, Moravia

23 Towns: Aurelius, Brutus, Cato, Conquest, Fleming, Genoa, Ira, Ledyard, Locke, Mentz, Montezuma, Moravia, Niles, Owasco, Scipio,



Sempronius, Sennett, Springport, Sterling, Summerhill, Throop,
Venice, Victory

3.2.3.2 Creation and Purpose

- A. The CCWSA was created on July 26, 1995 after a comprehensive review of water and sewer infrastructure needs of Cayuga County residents determined a public authority was needed.
- B. The CCWSA is a component unit of Cayuga County and was created after the adoption of State legislation.
- C. The CCWSA is a corporate governmental agency constituting a public benefit corporation comprising of a public district.
- D. The CCWSA is authorized to serve all of Cayuga County.

3.2.3.3 Organizational Structure

- A. The CCWSA is governed by an uncompensated Board of Directors consisting of nine (9) members who must be residents of the County and who are confirmed by the County legislature for 3-year terms each.
- B. The officers elected annually consist of a Chairperson, Vice Chair and a Treasurer who shall be members and a secretary who does not need to be a member of the Board.
- C. Cayuga County Water and Sewer Authority Staff consist of the following:
 - Director of Operations (part-time).
 - One (1) full-time Senior Clerk.
 - One (1) part-time Typist.
 - One (1) full-time water maintenance person.
 - One (1) part-time water maintenance person.
 - One (1) part-time water/sewer maintenance mechanic.

3.2.3.4 Water Services

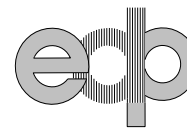
- A. The Authority purchases the majority of its water from the City of Auburn. The Authority has a 20-year water purchase agreement with the City.
- B. The City of Auburn owns and operates its own water supply, treatment and distribution system within the City.
- C. The City of Auburns water supply comes from Owasco Lake.
- D. The City sells water to the Authority at a wholesale rate.
- E. The Authority also purchases water from the following sources:



1. Village of Fair Haven - Water purchased from the Village of Fair Haven is sold by the Authority to the Wayne County Water and Sewer Authority.
 2. Wayne County Water and Sewer Authority - the CCWSA purchases wholesale water from the WCWSA to supply water to a Town water district in the Town of Victory.
- F. The Authority sells water to commercial/residential retail customers that are located within established Town Districts.

3.2.3.5 Wastewater Services

- A. In 2005, Cayuga County Sewer District No. 2 was formed by the County Legislature to satisfy a NYS DEC Consent Decree with the Village of Fair Haven.
- B. The Village of Fair Haven and Town of Sterling work cooperatively with the CCWSA to construct the sewer system to its completion. The system became fully operational by the end of 2013.
- C. The sewage is collected via gravity and low pressure lines and transported directly to the Red Creek Wastewater Treatment Plant that is owned and operated by the Wayne County Water and Sewer Authority.
- D. Capital is charged through property tax. Operation and Maintenance fees and treatment are charged to each property within Sewer District No. 2.



3.2.4 Livingston County Water and Sewer Authority

Key Facts

County Population: 65,393		Land Area: 632 sq. mi.	
Local Governments: 9 Villages and 17 Towns			
Services Provided			
Water		Wastewater (collection and treatment)	
Service Area: Entire County		Service Area: Entire County	
Source(s) of water: City of Rochester			
Organizational Structure:			
<ul style="list-style-type: none">7 member Board of Directors			
Staffing:			
<ul style="list-style-type: none">1 full time			
Operating Budget: \$2,500,000 (2013)			
Additional Information:			

3.2.4.1 Background

- Livingston County had a 2010 population of 65,393.
- Livingston County is located in western New York just south of Rochester.
- Livingston County has 640 square miles of area of which 632 square miles is land and 8 square miles is water.
- Livingston County is governed by a County Legislature consisting of 17 members.
- There are 26 governments in Livingston County:

0 Cities

9 Villages: Avon, Caledonia, Dansville, Geneseo, Leicester, Lima, Livonia, Mount Morris, Nunda

17 Towns: Avon, Caledonia, Conesus, Geneseo, Groveland, Leicester, Lima, Livonia, Mount Morris, North Dansville, Nunda, Ossian, Portage, Sparta, Springwater, West Sparta, York



3.2.4.2 Creation and Purpose

- A. The LCWSA was created in 1995 to provide high quality, environmentally sound, efficient, reliable and affordable water and sewer services to the people who live, work and visit Livingston County.
- B. The LCWSA is a corporate governmental agency constituting a public benefit corporation comprising of a public district.
- C. The LCWSA is authorized to provide services Countywide.

3.2.4.3 Organizational Structure

- A. The LCWSA is governed by a Board of Directors consisting of seven (7) members who must be residents of the County and who are appointed by Resolution by the Board of Directors of Livingston County.
- B. The officers elected annually consist of a Chairperson, Vice Chair and a Treasurer who shall be members and a secretary who does not need to be a member of the Board.
- C. LCWSA staff consist of the following:
 - Executive Director
 - Financial Manager
 - Sr. Account Clerk/Typist
 - Account Clerk/Typist
 - Water Treatment Plant Operator
 - Sewage Treatment Plant Operators (2)
 - Water/Wastewater Maintenance Staff (4)

3.2.4.4 Water Services

The Livingston County Water System consists of the following:

- 65 miles of water lines
- 12 tanks
- 5 pump stations

3.2.4.5 Wastewater Services

The sewer system consists of the following:

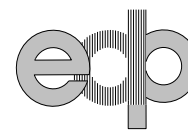
- 50 miles of sewer lines
- 46 pump stations



3.2.4.6 Additional Information

Operating Budget – Livingston County Water and Sewer Authority:

2013	Sewer	Water	Total
Operating Revenues	\$1,424,603	\$1,317,729	\$2,742,331
Operating Expenses	\$1,266,447	\$1,213,995	\$2,480,441
REVENUES less EXPENSES	\$ 158,156	\$ 103,734	\$ 261,890



3.2.5 Dutchess County Water and Wastewater Authority

Key Facts

County Population: 297,488		Land Area: 802 sq. mi.	
Local Governments: 2 City, 8 Villages and 20 Towns			
Services Provided			
Water		Wastewater (collection and treatment)	
Service Area: Entire County		Service Area: Entire County	
Source(s) of water: City of Hyde Park Individual wells			
Organizational Structure:			
<ul style="list-style-type: none">8 member Board of Directors			
Staffing:			
<ul style="list-style-type: none">11 full time			
Additional Information:			
<ul style="list-style-type: none">The Authority is authorized to provide service within the entire County; however, individual Zones of Assessment are established in all locations where service is provided. The Zones of Assessment are established using the same procedure as County Districts.The Authority must be "invited" into a community to provide services.			

3.2.5.1 Background

- Dutchess County had a 2010 population of 297,488.
- Dutchess County is located in the southern Hudson Valley.
- Dutchess County has 825 square miles of area which 802 square miles of land and 24 square miles of water.
- Dutchess County is governed by a County Legislature with a County Executive. The County Legislature has 25 members.
- There are 30 governments in Dutchess County:

2 Cities: Beacon and Poughkeepsie

20 Towns: Amenia, Beekman, Clinton, Dover, East Fishkill, Fishkill, Hyde Park, LaGrange, Milan, North East, Pawling, Pine Plains, Pleasant Valley, Poughkeepsie, Red Hook, Rhinebeck, Stanford, Union Vale, Wappinger, Washington

8 Villages: Fishkill, Millbrook, Millerton, Pawling, Red Hook, Rhinebeck, Tivoli, Wappingers Falls



- The DCW&WA has its origins in a series of predecessor agencies.
- In 1985, the Dutchess County Water Resources Task Force was created by the Dutchess County Executive to:
 - 1) Identify water resource problems in the County.
 - 2) Explore the need for County involvement in water and sewer management.
 - 3) Recommend governmental and nongovernmental responses.
- After identifying and documenting numerous water resource related problems in the County, the Task Force was reconstituted in 1986 as the Dutchess County Water and Resource Policy Group.
- Both the Task Force and the Policy Group were composed of diverse membership including city and village mayors, town supervisors, County legislators, County commissioners, County Environmental Management Council members, County Soil and Water Conservation District officials, small business owners, citizens, and representatives from private environmental organizations.
- In 1988, the Dutchess County Water Resource Policy Group recommended that the County Legislature create the Dutchess County Water and Wastewater Agency. This Agency was created in 1989. It functioned as a policy coordinating and information exchange body and make recommendations to the Legislature regarding water resource issues.
- The Agency recommended that County Water and Sewer Authority be created.

3.2.5.2 Creation and Purpose

- The DCW&WA was created in 1991 under the Dutchess County Water and Wastewater Authority Act as a public benefit corporation.
- The Authority's mission is to protect and enhance the health, environmental sustainability and economic stability of Dutchess County and its residents through the provision of clean drinking water and proper treatment of wastewater.
- The Dutchess County Water and Wastewater Authority Act authorized the Authority to provide for the supply and sale of water for domestic, commercial and public purposes at retail to individual customers within the County or wholesale to municipalities, water districts or district corporations within the County and for the collection, treatment and disposal of sewage within the County.
- The DCW&WA offers assistance to Dutchess County and municipalities in all issues related to the planning, development, financing and operation of water and wastewater infrastructure, and the identification of aquifer and other groundwater sources.



3.2.5.3 Organizational Structure

- The DCW&WA is governed by a Board of Directors consisting of eight (8) members as follows:

5 are voting members

3 are non-voting members

- Voting members serve five (5) year terms with two (2) members appointed by the County Executive, two (2) appointed by the Chairman of the County Legislature and the fifth being a joint appointment confirmed by the entire Legislature.
- The non-voting members include the Director of the Dutchess County Environmental Management Council, the Director of the Dutchess County Soil and Water Conservation District, and the Commissioner of the Dutchess County Department of Planning and Economic Development.
- DCW&WA staff consists of the following:

Executive Director

Director of Operations

Deputy Director/Staff Treasurer

Staff Operators

Environmental Services Specialist

Contract Operators

Project Managers

Project Facilitators

Billing

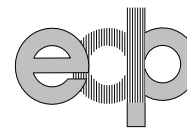
Bookkeeper

Administrative

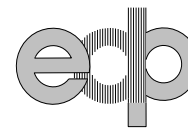
- DCW&WA staff operate all facilities comprising the Hyde Park Water System. The DCW&WA contracts with private companies to operate and maintain all other water systems.
- DCW&WA contracts with private companies to operate and maintain all sewer systems.

3.2.5.4 Water Services

- There exists a Dutchess County Water District that comprises the entire County.
- The DCW&WA operates the following nine (9) individual water systems within the Water District:



1. Hyde Park Water System
 2. Staatsburgh Water System
 3. Schreiber Water System
 4. Valley Dale Water System
 5. Rokeby Water System
 6. Dalton Farms Water System
 7. Jeffrey Groves Water System
 8. Shore Haven Water System
 9. Birch Hill Water System
- The primary water system operated by the DCW&WA is the Hyde Park Regional Water System. The Hyde Park Regional Water System provides water from the Authority's Hyde Park Water Treatment Plant on South Road in the Town of Hyde Park to:
 1. The Hyde Park service area (Zones A and B).
 2. The Staatsburg service area (Zone C).
 3. Haviland and Harboured Hills service area (Zone D).
 4. The existing developed area now served by the Route 9G Water Main Connection (Zone L).
 5. Two (2) residential developments known as Crofton Mews (Zone G) and Jeffrey Grove Estates (Zone I).
 - The source of water for the Hyde Park Water Treatment Plant is the Hudson River. In 1998, the Authority purchased the water system operations and assets of the Hyde Park Fire and Water District for approximately \$17 million in 1998. The purchase included the Hyde Park Water Treatment Facility, storage facilities and distribution system.
 - The Hyde Park Water System is permitted to draw 6 mgd from the Hudson River. The Water Treatment Plant can treat 2.8 mgd. Total water consumption averages just under 1 mgd.
 - The water system also includes:
 - Water pump stations.
 - Treated water storage reservoir divided into two (2) elevated tanks
 - Separately located wells and treatment plant in case of emergency



- Other components of the DCW&WA water system include:

Service Area	Area Served	# Customers	Water Usage	Source of Water
Birch Hill	.14 sq. miles	68	12,100 gpd	2 groundwater wells
Shorehaven	.076 sq. miles	98	19,400 gpd	2 groundwater wells
Valleydale	.312 sq. miles	164	27,670 gpd	6 groundwater wells
Schreiber	.026 sq. miles	23	2,200 gpd	2 groundwater wells
Rokeby	.022 sq. miles	55	8,700 gpd	2 groundwater wells

The DCW&WA also operates a 13-mile water transmission main that was installed in 2007. This transmission main brings water from the Hudson River to two (2) customers at the southern end of the line: IBM and Hopewell Glen Water Districts in the Town of Fishkill. These two (2) customers have a “take or pay” contract with the DCW&WA for 2.050 million gallons per day with a rate accommodation for water not taken.

Water Rates:

- Birch Hill: \$8.08/1,000 gallons plus \$27.65/month service charge
- Dalton Farms: \$3.19/1,000 gallons plus month service charge based on size of water service
- Zone D: \$4.86/1,000 gallons plus month service charge based on size of water service
- Fairways: \$5.00/1,000 gallons plus \$46.00/month service charge
- Hyde Park:
 - Zones A & B: \$4.86/1,000 gallons plus monthly service charge based on size of water service
- Hyde Park:
 - Zone C: \$5.78/1,000 gallons plus monthly service charge based on size of water service
- Hyde Park:
 - Zones L: \$4.86/1,000 gallons plus monthly service charge based on size of water service
- Rokeby:
 - 1) Base Rate: for usage from zero to 9,000 gallons, \$9.05 per 1,000 gallons with a minimum charge of \$81.45 per billing period if usage is up to and including 9,000 gallons for a 3-month billing period. (All customers subject to minimum charge per billing period, regardless of usage)
 - 2) For usage above 9,000 gallons to 25,000 gallons: \$9.05 per 1,000 gallons.
 - 3) For usage above 25,000 gallons, \$10.80 per 1,000 gallons
- Schreiber: \$9.50/1,000 gallons plus \$30/month service charge



- Shorehaven: \$29.08/month plus \$29.15/month service charge
- Valleydale: \$5.82/1,000 gallons plus monthly service charge based on size of water service

3.2.5.5 Wastewater Services

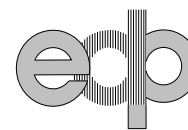
- There exists several Dutchess County Sewer Districts that serve parts of the County.
- The DCW&WA owns and operates three (3) separate sanitary sewer systems:
 1. Chelsea Cove Sanitary Sewer System
 2. Valley Dales Sanitary Sewer System
 3. Dalton Farms Sanitary Sewer System

Each sewer system is operated independently. Each system is run by the DCW&WA by a private operator the Authority contracts with.

Two (2) additional part-County Sewer Districts have been created. However, the sewer systems have yet to be built. They are both pending the construction of the residential subdivisions they are intended to serve.

3.2.5.6 Relevant Agreements

- In 1991, Dutchess County created the Dutchess County Water District which included all of Dutchess County. The Water District has all powers as provided in Article 5-A of County Law including without limitation, the power to enter into contracts with an Agency or instrumentality for the purchase of water.
- In 1991, Dutchess County created the DCW&WA.
- Dutchess County then created Zones of Assessment within the County Water District.
- In 1998, Dutchess County executed a Service Agreement with the DCW&WA whereby Dutchess County contracted with the DCW&WA to provide water to the Zones of Assessment and to perform certain capital construction work.
- In return for the DCW&WA providing water services to the Zones of Assessment and performing certain capital construction work, Dutchess County pays an annual "Service Fee" to the DCW&WA. The amount of the Service Fee is an amount to pay the principal and interest payments on certain bonds issued by the DCW&WA.
- This Agreement was renewed in 2009 for a 20-year term.



3.2.6 Town of Wilton Water and Sewer Authority

Key Facts

Town Population: 16,173		Land Area: 36 sq. mi.	
Services Provided			
Water		Wastewater (collection)	
Service Area: Portion of the Town		Service Area: Portion of the Town	
Source(s) of water: Groundwater Wells Saratoga County Water Authority			
Organizational Structure:			
• 5 member Board of Directors			
Staffing:			
• 3 full time and 2 part time positions			

3.2.6.1 Background

- The Wilton Water and Sewer Authority (WWSA) was created in 1992.
- The WWSA owns and operates:
 - A water supply and distribution system.
 - A sewer collection system.
- The WWSA does not own or operate a wastewater treatment facility. The WWSA collects wastewater and conveys it to the Saratoga County Sewer District No. 1 wastewater treatment facility in Mechanicville.
- The WWSA's water supply comes from three (3) sources:

1. Three (3) groundwater source locations owned and operated by the WWSA.	440,000 gpd
2. Wholesale purchase of water from the County of Saratoga.	300,000 gpd
3. Wholesale purchase of water from the City of Saratoga Springs.	0 gpd
Total	740,000 gpd



- Five (5) years ago, the Town of Wilton petitioned the Saratoga County Sewer District #1 to include the entire Town of Wilton so that the entire Town can receive "in-district" rates. Saratoga County approved the Town's request.
- The WWSA does not request any assistance from the Town of Wilton.

Previous Water Delivery & Sewer Collection System within Town of Wilton:

Water

Prior to the establishment of the WWSA in 1991, water was provided to a small portion of the Town of Wilton through a privately owned company called Wilton Water Supply. Wilton Water Supply owned and operated a groundwater supply source and storage tanks located on the McGregor Links Country Club. The area serviced by the private water system was an area immediately adjacent to the McGregor Links Country Club. There were less than 700 customers.

The rest of the Town of Wilton was serviced by groundwater wells.

Sewer:

In 1971, Saratoga County established the Saratoga County Sewer District No. 1 (SCSD#1) which encompassed portions of, (approximately 186 sq. mi.), Saratoga County. Part of the service area encompassed a small portion of the Town of Wilton.

The Saratoga County Sewer District No. 1 included a trunk main extending from the City of Saratoga Springs to the Mount McGregor Correctional Facility and the Wilton Developmental Center.

Other than property owners adjacent to the Saratoga County Sewer District No. 1 trunk line connected to the sewer system, all other properties in the Town were serviced by private, onsite septic systems.

3.2.6.2 Creation and Purpose

Water:

In the late 1980's and early 1990's, the Town of Wilton was experiencing a considerable development pressure. The Wilton Town Board determined that in order to meet the demands for increased development, water and sewer service was essential.



In 1991, the Wilton Town Board, through NYS enabling Legislation, created the Wilton Water & Sewer Authority (WWSA). The Town Board chose to create an Authority to:

- 1) Keep politics out of running a water and sewer system.
- 2) Keep Authority's debt separate from Town.

Sewer:

Once created, the WWSA began assessing two (2) issues:

2. How to develop and expand a sewer collection system to meet the increasing developmental demands in the Town.
3. How would it treat the wastewater it collected? Two (2) options were available:
 - Continue to send to Saratoga County
 - Construct a Town WWTP

For years, most of the Town was not included in Saratoga County Sewer District #1. As an "out of District" user, WWSA sewer customers had to pay out-of-District sewer rates to Saratoga County Sewer District #1. The out of District rate is 2.5 times the in-District rate. Five (5) years ago, the WWSA Board of Directors worked with the Town of Wilton to petition the County of Saratoga to expand the SCSD#1 to include the entire Town of Wilton. The SCSD approved the WWSA's request. As a result, users now pay in-District rates.

3.2.6.3 Organizational Structure

- The WWSA is governed by a 5-member Board of Directors that is appointed by the Town of Wilton Town Board. The Bylaws of the WWSA stipulated that no member of the Board of Directors can be an elected official or work for the Town of Wilton.
- The WWSA has five (5) employees:

Full-Time:

- Director
- Operator
- Secretarial

Part-Time:

- Bookkeeper
- Comptroller



3.2.6.4 Water Services

Water Rates:

- WWSA current water rates and buy-in fees are as follows:
 - Water Rate: \$3.95 per 1,000 gallons: All users except those at Exit 15
 - Water Rate: \$4.61 per 1,000 gallons for customers at Exit 15
 - Water Buy-in Fee: \$3,200 per EDU (Equivalent Domestic Unit)

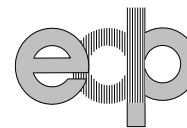
3.2.6.5 Wastewater Services

Sewer Rates:

1. Sewer rates are established based on the number of Equivalent Domestic Units (EDUs) for each establishment with an EDU defined as a single family home using 300 gpd.
2. The WWSA charges \$31.75 per EDU billed on a quarterly basis.
3. The WWSA charges each new customer a \$1,700 Capital Improvement fee.

3.2.6.6 Additional Information

- The WWSA utilizes an emergency service agreement with a private contractor to perform repairs to the water distribution and sewer collection systems.
- The WWSA stocks a large supply of repair parts to both the water and sewer system. The WWSA owns one backhoe.



3.2.7 Mohawk Valley Water Authority

Key Facts

Services Provided	
Water	Wastewater
Service Area: City of Utica 6 Towns in Oneida County 2 Towns in Herkimer County 7 Villages in Oneida County Total service population of approximate 130,000	
Source(s) of water: Hinckley Reservoir	No Service Provided
Organizational Structure: <ul style="list-style-type: none"> 12 member Board of Directors 	
Operating Budget: \$13,700,000 (2012)	
Additional Information: <ul style="list-style-type: none"> MVWA purchased the City of Utica's water system 	

3.2.7.1 Background

- A. The MVWA became effective on August 2, 1994 following approval by the NYS Legislature.
- B. The MVWA acquired title of the City of Utica's water system through a Sale Agreement, dated October 30, 1996 by and between the MVWA, the Finance Authority and the City of Utica. The MVWA acquired the system's assets including the collection, distribution and transmission systems, and water treatment plant.
- C. The Finance Authority (FA) is the financing entity of the MVWA. The FA financed the purchase of the City of Utica's water system through the issuance of bonds.
- D. As part of the Sales Agreement, the MVWA agreed to impose rates, fees, and charges in an amount sufficient to pay debt service on any indebtedness issued by the FA and to operate the water system in a self-sustaining, sound and economical manner and to maintain the water system in good working order.

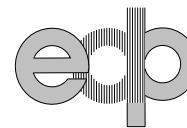


3.2.7.2 Creation and Purpose

- A. MVWA was created to more equitably represent the service area it provides water service to and to promote the strengthening and improvement of the regional water system.

3.2.7.3 Organizational Structure

- A. The MVWA is a body corporate and politic constituting a corporate municipal instrumentality of the State of New York established and existing pursuant to the Act.
- B. The MVWA is composed of twelve (12) members appointed as follows:
- Two (2) City of Utica residents appointed by the City Council.
 - Two (2) City of Utica residents appointed by the Mayor.
 - Two (2) City of Utica residents appointed by Oneida County Legislature.
 - Two (2) members appointed by the Oneida County Executive-one of which shall be confirmed by the Herkimer County Legislature-both of which are residents outside the City of Utica.
 - One (1) member appointed by the Town of New Hartford.
 - One (1) member appointed by the Town of Whitestown.
 - One (1) member appointed alternately by the Town Boards of Marcy, Schuyler and Kirkland.
 - One (1) member appointed alternately by the Town Boards of Trenton, Deerfield and Frankfort.
- C. All MVWA members are appointed for a term of three (3) years. MVWA members are appointed for their full three (3) year term or until a successor is appointed, except that any person appointed to fill a vacancy will be appointed to serve only the unexpired term.
- D. The FA, the financing entity of MVWA, has a separate board consisting of five (5) members appointed as follows:
- One (1) City of Utica resident appointed by the City Council.
 - One (1) City of Utica resident appointed by the Mayor.
 - One (1) member by the Oneida County Executive-alternately appointed from a resident within the City of Utica and a resident outside the City of Utica.
 - One (1) member appointed alternately by the Town Boards of New Hartford and Whitestown.



- One (1) member appointed by a majority vote of representatives in attendance at a meeting for such purpose from the Towns of Deerfield, Frankfort, Kirkland, Marcy, Trenton and Schuyler.
- E. All FA members are appointed for a term of three (3) years. The FA members are appointed for their full three (3) year term or until a successor is appointed, except that any person appointed to fill a vacancy will be appointed to serve only the unexpired term.

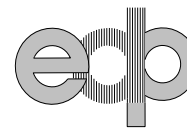
3.2.7.4 Water Services

Service Area of the MVWA:

A. MVWA serves the following municipalities:

1. City of Utica
2. Six (6) Towns in Oneida County:
 - Deerfield, portion
 - Kirkland, portion
 - Marcy, all
 - New Hartford, portion
 - Trenton, portion
 - Whitestown, portion
3. Two (2) Towns in Herkimer County:
 - Frankfort, portion
 - Schuyler, portion
4. Seven (7) Villages in Oneida County:
 - Clark Mills
 - Holland Patent
 - New Hartford
 - New York Mills
 - Oriskany
 - Whitesboro
 - Yorkville

B. The MVWA serves approximately 130,000 people.



Source of Water Supply:

- A. The source of water for the regional system is the Hinckley Reservoir located 18 miles north of the City of Utica. The Reservoir's watershed encompasses 373 square miles of largely undeveloped lands mostly within the Adirondack Park region.
- B. Hinckley Reservoir was created in 1911 and is owned by the State of New York.
- C. The Reservoir has a capacity of 25 billion gallons and is used primarily by the New York Power Authority for power generation. The Reservoir is also used to adjust the water levels on the Erie Canal system, as a recreation area, and the source of water for the MVWA.
- D. Presently, the MVWA has a water supply permit to draw 48.5 million gallons per day.

Water Transmission and Distribution System:

- A. From the intake structure at the Hinckley Reservoir, water is conveyed through two (2) parallel transmission mains to a Water Treatment Plant facility located downstream from Hinckley Reservoir in the Town of Trenton. The treated water is conveyed, by gravity, from the treatment plant through two (2) parallel transmission mains to the Marcy and Toby Road tanks. From there, water is conveyed, by gravity, to the Deerfield, Marcy and Toby Road Tanks on the transmission mains.
- B. Water in the distribution system is pumped to higher elevations to provide sufficient pressure.
- C. All drinking water storage is within enclosed concrete or steel tanks in accordance with Department of Health Standards.
- D. The water system transmission and distribution mains total 42.5 miles and 658 miles, respectively.

Water Usage:

- A. Average daily production at the Water Treatment Plant is 17.9-20.4 million gallons per day (MGD).
- B. Average daily consumption is 9.8 MGD.
- C. Unaccounted for water totals 35% of total production.

Water Rates:

- A. All customers are charged:
 - 1) A Water Consumption Rate
 - 2) A Readiness to Serve System Charge



B. Water Consumption Rate:

Tier 1	First 900	(0-900 cubic feet)	-	\$30.16 minimum charge
Tier 2	Next 5,100	(1,000 – 6,000 cubic feet)	@	\$29.55 per 1000 cubic feet
Tier 3	Next 64,000	(6,100 – 70,000 cubic feet)	@	\$29.25 per 1000 cubic feet
Tier 4	Thereafter	(70,100 – unlimited cubic feet)	@	\$19.90 per 1000 cubic feet

C. Readiness to Serve System Charge:

<u>Meter Size (in inches)</u>	<u>Amount</u>
5/8	\$ 27.63
¾	\$ 30.40
1	\$ 69.09
1½	\$ 138.18
2	\$ 221.10
3	\$ 442.19
4	\$ 690.92
6	\$1,381.85

3.2.7.5 Additional Information

2012

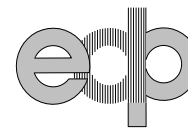
Operating Revenue	:	\$20,400,000
Operating Expenses	:	\$13,700,000

1. Payment in Lieu of Tax (PILOT) Payments:

- A. The MVWA was established as an “exempt organization” whereby no fees, taxes, levies or assessments would be charged against the Authority. In return for this exemption, municipalities and school districts within the service area affected by the exemption would be paid in lieu of taxes or assessments an amount established under the Act.



- B. All payments are subordinate to debt service payment on bonds as defined by the Act. However, the Board is empowered to make such payments subordinate to other payments under the Act or any subsequent bonding by the Finance Authority.
- C. The Board of the MVWA may reduce the amounts paid to the municipalities and school districts under this arrangement following a resolution approved by at least 75% of the Board. Such decreases must be uniformly applied to each municipality and school district.



3.2.8 City of Glens Falls / Town of Queensbury

3.2.8.1 Background

Glens Falls is located in the southeast corner of Warren County and is surrounded to the north, east and west by the Town of Queensbury. Its 2010 population was 14,700, while the Town of Queensbury's 2010 population in 2010 was 27,901. The combined 2010 population of these two (2) municipalities was 42,201. This community offers several parallels with the Fulton County Cities of Johnstown and Gloversville and surrounding Towns.

3.2.8.2 Glens Falls Wastewater Treatment Plant

The City of Glens Falls owns and operates a wastewater treatment plant. This plant, which was built in 1984, provides primary and secondary wastewater treatment to the residents and businesses in the City of Glens Falls but also to surrounding areas including the Town of Queensbury. When the plant was built, it was designed to treat effluent generated by a major pigment manufacturing company located in the City. That industry has closed and therefore no longer discharges effluent. As a result of this plant closing, the plant operates at approximately 50% of its design capacity.

The City of Glens Falls' 2013 sewer and water rates are as follows:

Sewer Rates:

Non-meter rate	\$58.57	per billing
Meter Rate:	\$2.169	per 100 cubic feet

Sewer Capital Charge: \$1.541 per 1000 of assessed valuation per year.

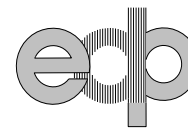
Water Rates:

Non-meter rate	\$35.05	per billing
Meter Rate:	\$1.298	per 100 cubic feet

Water Capital Charge: \$1.678per 1000 of assessed valuation per year.

3.2.8.3 Town of Queensbury Sewer Districts

The Town of Queensbury does not own or operate a wastewater treatment plant. However, the Town does operate and manage seven (7) Town Sewer Districts.



The following is a summary of key information about each District:

Name of District	# Users	Feet of Sewer Mains	User Rate	Other
Queensbury Consolidated	Numerous businesses/residents	25 miles	Residential: \$5.50/1,000 gallons Comm.: \$7.00/1,000 gallons	16 grinder stations 3 lift stations
Pershing, Ashley and Coolidge	32 homes	7,000'	\$5.50/1,000 gallons	
Reservoir Park	27 homes	1,800'	\$369/year	
Route 9	Commercial Area	50,000'	\$40.549/unit	Pump Station: Capacity of 1.15 mgd
South Queensbury	Includes areas in 4 municipalities	20,000'	\$5.50/1,000 gallons	2 lift stations Each Station:103,000/gpd
Technical Park	Business Park	15,000	\$5.50/1,000 gallons	
West Queensbury	Residential/ Commercial	7,000	\$5.50/1,000 gallons	
7 Sanitary Sewer Districts		228,800' or 43.3 miles		

The Town of Queensbury has a Department of Wastewater that handles all matters dealing with the operation, administration and maintenance of these Town Sewer Districts.

3.2.8.4 Wastewater Treatment Agreement

In 1985, the City of Glens Falls and Town of Queensbury executed an Inter-municipal Agreement whereby the City provided excess wastewater treatment capacity to the Town of Queensbury. This Agreement was subsequently superseded by a new Agreement executed in 2002 (See Appendix B). Key components of this 2002 Inter-municipal Agreement include:



- The City allocated approximately 800,000 gpd of purchased capacity at its wastewater plant to the Town.
- The City guarantees that the Town shall have the right of 1st refusal to obtain an additional 2,500,000 gallons per day of treatment capacity.
- The Town pays a wholesale rate for the sewer capacity.
- The Town may allocate its Purchased Capacity among its sewer districts and properties located within the Town as the Town deems appropriate. However, the Town's Purchased Capacity shall be limited solely and exclusively to the Town's needs, and shall not be available for use by other municipalities or private entities located outside the Town unless approved by the City.
- The Town pays a proportional share, based on total gallons treatment for each municipality based on total flows, of costs included in the City's contract for operations and maintenance of its water and wastewater facility with Earth Tech, Inc. The Town shall pay an amount equal to its:
 - (a) Proportional share of wastewater treatment, plus
 - (b) Proportional share of Water Distribution and Wastewater Collection, without utilities for lift stations, x 70% (this is to eliminate the 30% for Water Distribution), plus
 - (c) Proportional share of electricity to operate the POTW Treatment Plant.
- The Town shall pay an additional 25% of the total of the O & M Charge to cover the City's administrative overhead (direct and indirect), repairs, contingencies, and transmission costs.
- Town agreed to allow City to annex the Veterans Field for development of light industrial or manufacturing businesses.
- During the term of this Agreement, the City shall not bring a petition under General Municipal Law Section 703 or 706 unless the then existing Town Board shall first authorize such action by resolution.
- Warren County and the City executed a 40-year Sales Tax Agreement which stipulated that the County would pay the City an amount equal to 2% of the County's retained tax revenue.

3.2.8.5 Key Points

- The City of Glens Falls and Town of Queensbury have a combined population of 42,200. The Cities of Gloversville and Johnstown and Town of Johnstown have a combined population of 31,500.
- The Glens Falls and GJJWTF both have excess capacities.



- The Town of Queensbury surrounds the City of Glens Falls.
- The Town of Johnstown surrounds the Cities of Gloversville and Johnstown.
- The City of Glens Falls and Town of Queensbury negotiated and executed an Inter-municipal Agreement that allocated excess wastewater capacity at the City's plan to the Town of Queensbury. This allowed the Town to create sewer districts. The creation of these sewer districts has generated growth and development in the Town of Queensbury. Glens Falls has financially benefited from this growth and development. The Wastewater Treatment Agreement was a win-win situation for the Town and City.



4. RECOMMENDED MODEL FOR A REGIONAL WATER AND WASTEWATER SYSTEM IN FULTON COUNTY

Based upon the research conducted, EDP believes a regional water and wastewater system can be successfully implemented by Fulton County. EDP believes such a regional system can provide economic benefits for the Region by promoting land development.

EDP believes that the model for implementing a regional water and wastewater system has two (2) structural components:

1. Administrative Structure
2. Operational Structure

4.1 Administrative Structure

There are two (2) administrative structures available to Fulton County to administer and manage a regional water and wastewater system:

1. A system administered and managed by the existing Board of Supervisors.
2. A system administered and managed by a new Public Authority.

There are multiple examples of regional systems throughout the state operating under each of these structures.

4.1.1 A Regional System Administered and Managed by the Existing Board of Supervisors

4.1.1.1 Basic Structure

This structure would have the existing Board of Supervisors develop, operate and manage the regional water and wastewater system. The Board would develop sources of supply, obtain excess capacities from existing municipal systems, develop transmission and distribution piping, award construction contracts, levy assessments and perform all other work necessary to develop and operate a regional system.

Under this structure, the Board could take an active, passive or combined role in the administration, operation and maintenance of the system as described below:

Active Role: The Board of Supervisors develops its own water and wastewater capacities and develops and maintains its own infrastructure within a Special District or Districts.



Passive Role: The Board of Supervisors executes and coordinates Inter-municipal Agreements with existing municipal water and wastewater systems to provide water and wastewater services. The County would have no direct role in the operation and maintenance of the water or wastewater systems. The municipality providing the service would operate and maintain the water or wastewater system infrastructure.

Combined Active / Passive Role: The Board of Supervisors could develop its own water and wastewater capacities and execute Inter-municipal Agreements

Special Districts would be required, under either approach, to define services areas, provide the ability to charge for services and pay capital costs.

Pursuant to NYS County Law (Article 5-A Section 261), the Board of Supervisors must appoint, designate or establish an officer, board or body as the Administrative Head or body of a County District. The Board of Supervisors may establish an office, board or body, or may designate an existing officer, board or body, or public authority act as a "county water or wastewater agency". The agency would have the power to carry out the provisions of Article 5-A "County Water, Sewer, Drainage and Refuse Districts". Such an Agency may be designated to serve as the Administrative Head or body of a County District.

The Fulton County Board of Supervisors, by Resolution 320 of 2002, has, in fact, already established a Fulton County Water and Sewer Agency. The Agency, as defined by the 2002 Resolution, is the Board of Supervisors. The Board of Supervisors could designate this Agency to serve as the Administrative Head of any new County Districts or could appoint some other Board, officer or body.

4.1.1.2 Advantages/Disadvantages:

Advantages:

- A regional system could be developed, operated and maintained under the existing Board of Supervisors.
- The Board could develop and implement a SMART Infrastructure Growth Plan for water and wastewater service throughout the County.
- The Board would have flexibility in the utilization of its resources in developing a regional system.
- A regional system could be implemented the quickest by using the existing structure of County Government.



- The Board could immediately begin implementing a regional system.

Disadvantages:

- Perception of the expansion of County Government.
- Potential influence of political processes in the provision of water and wastewater services.
- May be more difficult to fund future regional infrastructure improvements.
- Real property acquired in the name of a County District shall be assessed for the purpose of taxation.

4.1.2 A System Administered and Managed by a New Public Authority

4.1.2.1 Basic Structure

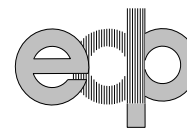
This structure would involve the creation of a new Public Authority under New York's Public Authority Law. The creation of a new County Authority would require the approval of both Fulton County and the New York State Legislature.

A new Public Authority would be separate from County Government and not fall under the direct oversight of the Board of Supervisors. It would have its own Board of Directors appointed by the Fulton County Board of Supervisors. The Authority Board, and not the Board of Supervisors, would oversee all operations of the Authority and have the power to:

- Secure sources of water and wastewater capacity
- Adopt a budget
- Hire staff
- Fix rates
- Collect charges for service
- Pay expenses
- Incur and pay off debt
- Maintain reserves

A new Authority would likely be authorized to provide water and wastewater services across the entire County with the exception of areas already served by municipal water or wastewater systems. A new Authority would have the option of establishing individual service areas or zones of assessment which would be similar to a Town or County Special District for the purposes of identifying service and receiving charges for services in a specific geographic area.

The process of creating a new Authority would be more involved than using the structure involving the existing Board of Supervisors. The primary difference is that an Authority must be



approved by the State Legislature. The last County Authorities approved by the State Legislature were the Livingston and Cayuga County Water and Sewer Authorities almost 20 years ago. There is currently a Bill in the New York Senate to create a Water and Sewer Authority in Brooklyn. The Bill was introduced in 2011, was referred to the Corporations, Authorities and Commissions Committee in 2012 and was introduced into the Senate in 2013. There has been no vote to date by either the Senate or Assembly.

4.1.2.2 Advantages and Disadvantages

Advantages:

- A new Authority would be separate from County government thereby limiting the potential involvement of political processes into the provision of water and wastewater services.
- An Authority can independently fix rates and collect charges for all obligations including operation and maintenance, debt and reserve funds.
- An Authority can issue bonds which would not be obligations of the County.
- An Authority, due to its flexibility in fixing rates, may have more flexibility to fund water and wastewater infrastructure projects.
- An Authority may be better positioned to fund infrastructure improvements.
- Real property owned by an Authority would be tax exempt.

Disadvantages:

- Uncertainty in the approval and creation of the Authority given the requirement that the State Legislature must approve the creation of an Authority.
- Length of time to create an Authority.
- Upfront costs to create an Authority.
- Perception of creating another layer of government.
- Lack of public input on rate setting.
- Subject to Public Authorities Reporting Information System (PARIS) reporting requirements.

4.1.2.3 Examples of Each Structure

Regional Systems Administered and Managed by County Government

Genesee County

- Genesee County operates a regional water system.
- County leases City of Batavia water system.



- County contracts with City to operate and maintain water system.
- County also purchases water from adjoining regional water authorities at wholesale prices.
- Towns and Villages create individual Water Districts (Special Districts).
- County executes Inter-municipal Agreements with Towns and Villages.
- County's primary role is to manage Inter-municipal Agreements.

Washington County

- Washington County operates a regional wastewater system.
- County created two (2) Sewer Districts that encompass portions of Washington County.
- Washington County owns and operates a wastewater treatment plant that services the two (2) Sewer Districts.
- A portion of one (1) Sewer District is actually served by the City of Glens Falls' wastewater treatment plant.

Regional Systems Administered and Managed by a Public Authority

Wayne County Water and Sewer Authority

- Purchases water from adjoining regional Water Authority and existing municipal systems in Wayne County at wholesale prices.
- Is systematically installing water lines throughout the County.
- Towns create Special Districts.

Dutchess County Water and Sewer Authority

- Acquires water from Hudson River.
- Authority is authorized to provide service across the countywide.
- Authority provides water service to a number of areas in Dutchess County. Each area is in what is called a "Zone of Assessment."
- Authority provides water service to a number of residential subdivisions. Developer installs water system and deeds system over to Authority to operate. All of these systems use groundwater wells as the source of water supply.

4.2 Operational Structure

The operational structure of a regional system can vary significantly in terms of the extent to which a regional service provider is involved in developing, operating, and maintaining water and wastewater system capacities and distribution / collection system infrastructure.

The Operational Structure of the model includes a number of key components including:



1. Where water and wastewater capacities will be obtained.
2. Based upon where water and wastewater capacities are obtained and where infrastructure is to be extended.
3. Creating policies and standards for infrastructure development.
4. Creating County Districts.

A regional service provider may choose to develop its own water supply and wastewater treatment capabilities and system infrastructure or rely on cooperation, through inter-municipal agreements, with other municipalities for the provision of these services. There are various options available to Fulton County to address these issues. EDP's research determined that the operational structure utilized in each regional water and wastewater system was what was needed to address the concerns of those involved and produced a win-win for all parties.

Since it is not known, at present, where water and wastewater capacities will be developed, which existing water and wastewater service providers will participate in a regional system, and where infrastructure will be installed, EDP does not offer any specific recommendations on the model's operational structure at this time. As the answers to these unknowns are established the operational structure can be further considered.

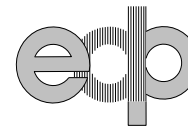
4.3 Recommended Model

EDP recommends Fulton County pursue a model with an administrative structure of using the existing Board of Supervisors to administer and manage the regional water and wastewater system.

EDP's research into existing regional water and wastewater providers verified that this model for administering and managing a regional system can be effectively implemented. EDP has determined that developing a regional system under the Board of Supervisors is the best fit for Fulton County.

Utilizing the existing structure of Fulton County government will provide the ability to immediately pursue the critical initial steps necessary to move forward with a regional water and wastewater system without the additional political and financial burden and uncertainty of forming a new County Authority. Should the County determine at a later date that an Authority would better serve their needs, and is reasonably assured of local and State Legislature support, a County Authority could be pursued. Note that this transition from Agency to Authority was successfully implemented in Dutchess County as discussed in Section 1.1.8.

Ultimately, the success of the regional system will depend less on the model or structure to administer and manage the system and more on the ability to work within the structure to



satisfy the needs of the communities involved. EDP believes the existing Board of Supervisors is best positioned to work with local communities.

EDP recommends that the first steps Fulton County should take to implement a regional water and wastewater system is to obtain water and wastewater capacities. The next section of this Report identifies all of the potential sources of water and wastewater capacities EDP has identified for Fulton County to pursue.

4.4 Special Districts

The provision of services by local government, such as water and wastewater, requires the establishment of a geographic boundary defining the area within which the service will be provided and providing the ability to charge properties within the area for the services. In the case of Cities and Villages, water and wastewater services are typically provided within the entire municipal boundary of the City or Village. In those instances, the "district" is the municipal boundary of the City or Village.

When services are provided at the Town or County level of government, a Special District, also commonly referred to as a special improvement district or simply a water or sewer district, is required. A Special District is necessary to define the geographic area receiving the service and provide the ability to charge properties within the district. It is not uncommon for a Town or County to establish multiple Special Districts.

The creation of a Special District defines the area to be served and provides the ability to charge properties for services. Special District costs are paid from ad valorem taxes and charges or fees levied against the properties within the district; however, the district itself does not have taxation or debt issuance power. All debt obligations issued on behalf of the district would be a general obligation of the local government that created the district and subject to applicable debt limits.

EDP recommends that Fulton County utilize County Special Districts to identify areas receiving water and wastewater services from the Regional System.

In accordance with New York State Public Authorities Law, an Authority must also establish a district within which it is authorized by the New York State Legislature to provide services. Unlike Special Districts at the Town or County level, the district established by an Authority does not indicate that properties within the district are actually benefitted by the Authority. Authorities often establish their district as the entire bounds of a County giving them the ability to provide service anywhere in the County.



5. POTENTIAL SOURCES OF WATER AND WASTEWATER CAPACITIES FOR A REGIONAL WATER AND/OR WASTEWATER SYSTEM IN FULTON COUNTY

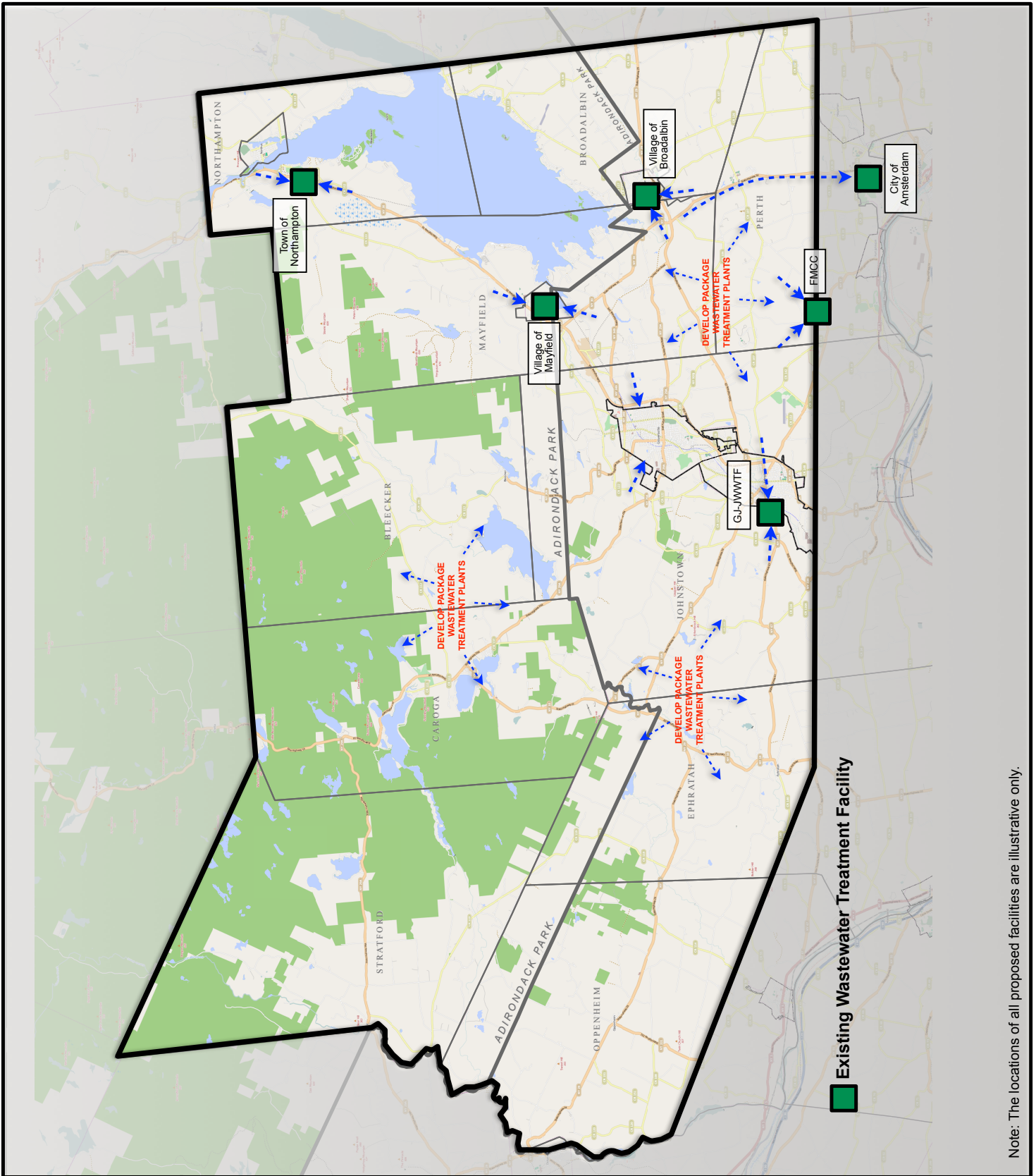
EDP has identified a number of options available to Fulton County to obtain water and wastewater capacities for a regional water and wastewater system. The following is a summary of these options:

A. Water Supply:

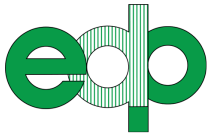
1. Existing Municipal Water Systems within Fulton County
 - a. Purchase excess system capacity
 - b. Purchase all or a portion of the existing system
 - c. Lease all or a portion of the existing system
2. City of Amsterdam
 - a. Purchase raw water
 - b. Purchase finish water
3. Develop New Groundwater Supplies
 - a. Existing Tryon Facility
 - b. Explore other locations in Fulton County
4. Develop the Great Sacandaga Lake as a New Surface Water Supply
 - a. Construct a new water treatment facility
 - b. Utilize the existing City of Gloversville water treatment facility

B. Wastewater Collection and Treatment:

1. Existing Municipal Wastewater Systems within Fulton County
 - a. Purchase excess system capacity
 - b. Purchase all or a portion of an existing system
 - c. Lease all or a portion of an existing system
2. Convey wastewater to the City of Amsterdam for treatment
3. New Wastewater Treatment Facilities
4. Fulton Montgomery Community College Wastewater Treatment Plant



Note: The locations of all proposed facilities are illustrative only.

 <p>ENVIRONMENTAL DESIGN PARTNERSHIP, LLP</p>	<h2 style="text-align: center;">POTENTIAL WASTEWATER TREATMENT OPTIONS FOR FULTON COUNTY</h2> <p style="text-align: center;">SMART Waters: A Regional Model for Water and Wastewater Services in Fulton County, NY</p> <p style="text-align: center;">Basemap Source: OpenStreetMap</p>	<p style="text-align: center;">NOT TO SCALE</p> <p style="text-align: center;">FIGURE: 5-2</p>
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As noted in Section 2, several municipalities within Fulton County own and operate existing water supply and wastewater treatment facilities. Figure 5-3 illustrates water distribution system infrastructure that currently exists outside the Cities and Villages in Fulton County. Expansion of these existing services would be the most economical means to extend service to areas within a reasonable proximity of these locations.

In more remote areas of the County, the development of new water and wastewater facilities would likely be more feasible due to the costs involved with extending existing infrastructure. If water services become desired or needed in these more remote areas, groundwater supplies and packaged wastewater treatment plants should be considered.

A regional water system would have the following options available to obtain water supply capacities:

Water Supply Options:

1. Acquire excess capacity from existing municipal water systems
2. Develop new groundwater supplies
3. Develop new surface water supplies

A regional wastewater system would have the following options available to it to obtain wastewater treatment capacity:

Wastewater Treatment Options:

1. Purchase excess wastewater treatment capacity from an existing treatment facility
2. Develop a new wastewater treatment facility
 - a. Packaged Treatment Plant
 - b. Full scale

The implementation of any of these water supply or wastewater treatment options would obviously depend upon the need for the service and ability to fund the required infrastructure costs. The extension of services throughout Fulton County is not currently economically feasible nor is there currently a need for water and wastewater services throughout the County. The intention of this Report is to provide a roadmap or model by which services could be extended when the need and finances allow. At this time the area of Fulton County most in need of these services is the southeastern quadrant of the County.

5.1 Development within Southeastern Fulton County

One of the primary avenues for growth within Fulton County is in the form of land development. The development of vacant land is critical to growing the tax base, generating sales tax revenues, and creating new jobs. The key factors to be considered in planning for



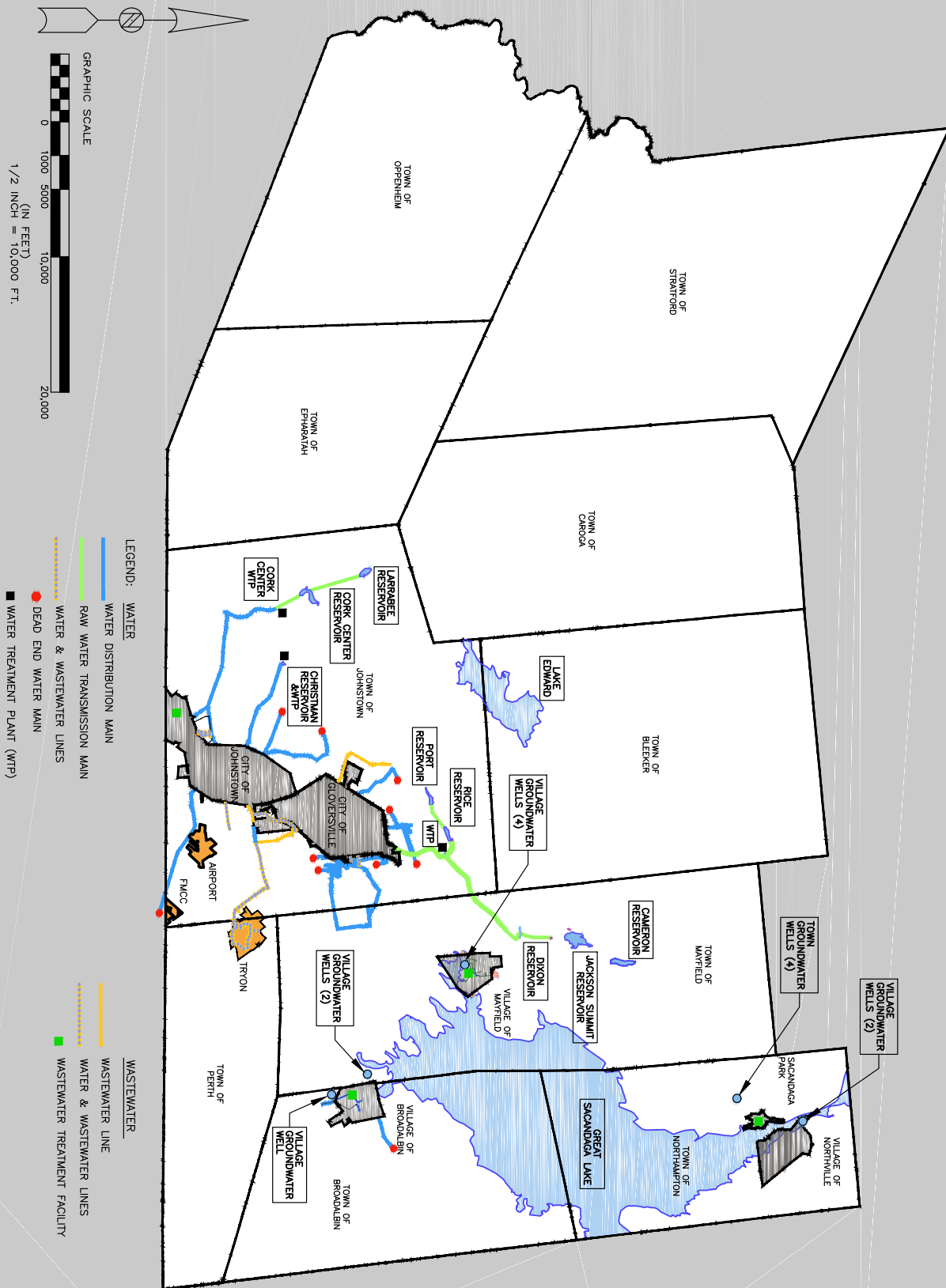
future development include the location of vacant developable land, the availability of water, wastewater, and other utilities to serve the area, and the accessibility of the area.

Given these basic criteria, the region of Fulton County most attractive for future development is the southeastern quadrant of the County. This is the area south of the Adirondack Park boundary and east of the two Cities. The Fulton County Planning Department indicates that there are several large tracts of land in that area (Figure 5-4) that have some potential to be developed into Shovel Ready Sites for new business or commercial, retail or housing developments.

Southeastern Fulton County is readily accessible from Exits 27 and 28 of Interstate I-90. As illustrated by Figure 5-5, the southeastern quadrant of Fulton County is within 10 miles of Exits 27 and 28. In addition to access, the topography in this area of the County is generally favorable for land development. As illustrated by Figure 5-6, areas of steep slopes are limited in southeastern Fulton County while the central portion of the County includes significant areas of steep slopes as illustrated by the red coloring of the illustration. Some areas within the western reaches of the County also include favorable terrain; however, these areas are not as accessible as southeastern Fulton County.

The current population density in this area also illustrates the favorable land development features of southeastern Fulton County. As depicted by Figure 5-7, the highest population density of Fulton County, and surrounding areas, is within the southeastern portion of the County.

One of the greatest challenges to promoting land development in this area is the availability of water and wastewater services. This Report has identified alternatives for the operational structure of a regional water and wastewater system. While the operational structure is certainly important, the source of potential water supply and wastewater collection and treatment capacities is equally important. The following sections present a detailed description of potential water supply and wastewater treatment alternatives with a focus on southeastern Fulton County but with applicability to other areas of Fulton County as well.



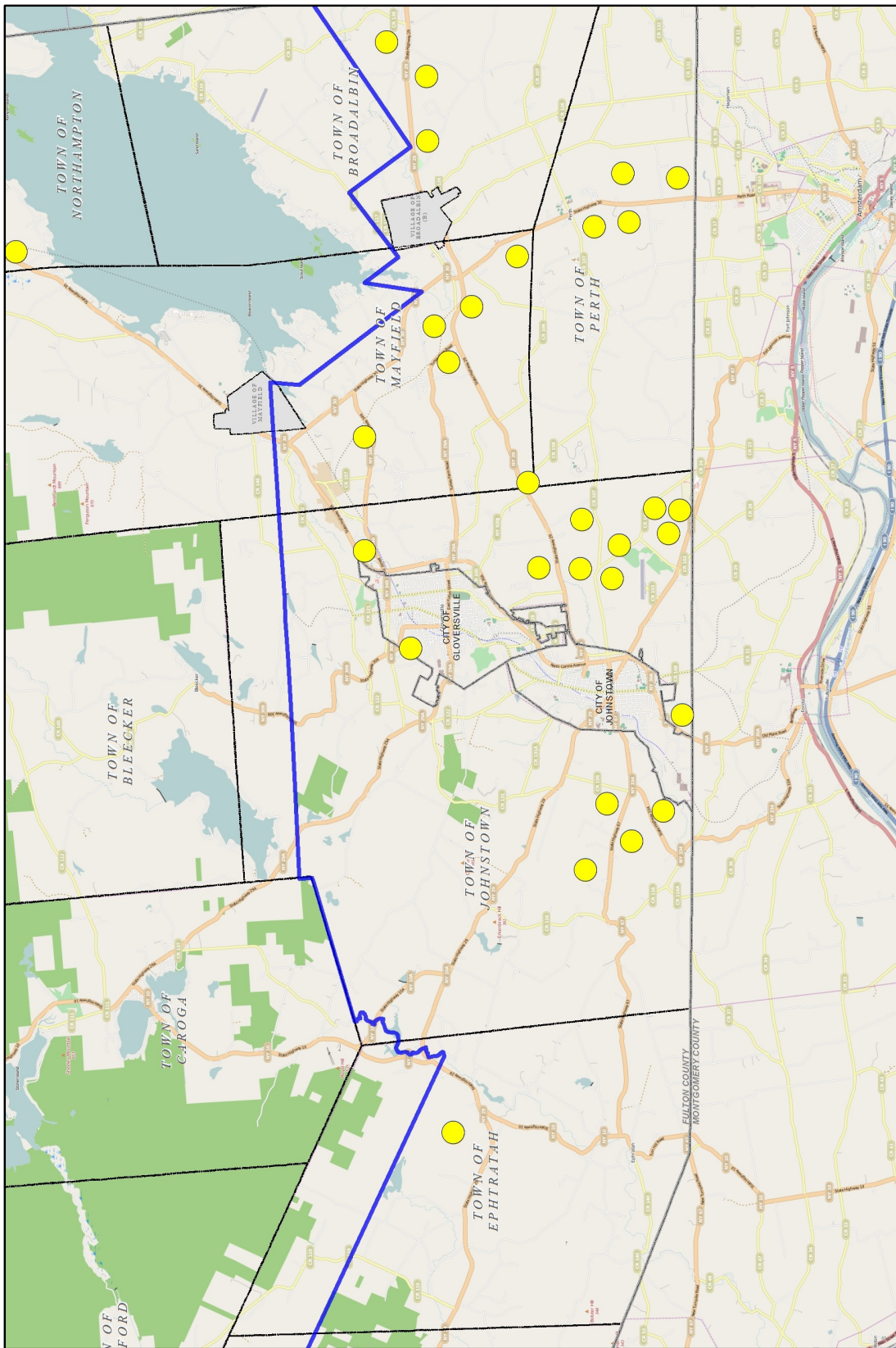
EXISTING WATER & WASTEWATER INFRASTRUCTURE OF FULTON COUNTY

SMART Waters: A Regional Model for Water and Wastewater Services in Fulton County, NY

Source: Fulton County Planning Department

NOT TO SCALE

FIGURE:
5-3



● Large Tract of Land with Development Potential as identified by the
 ● Fulton County Planning Department

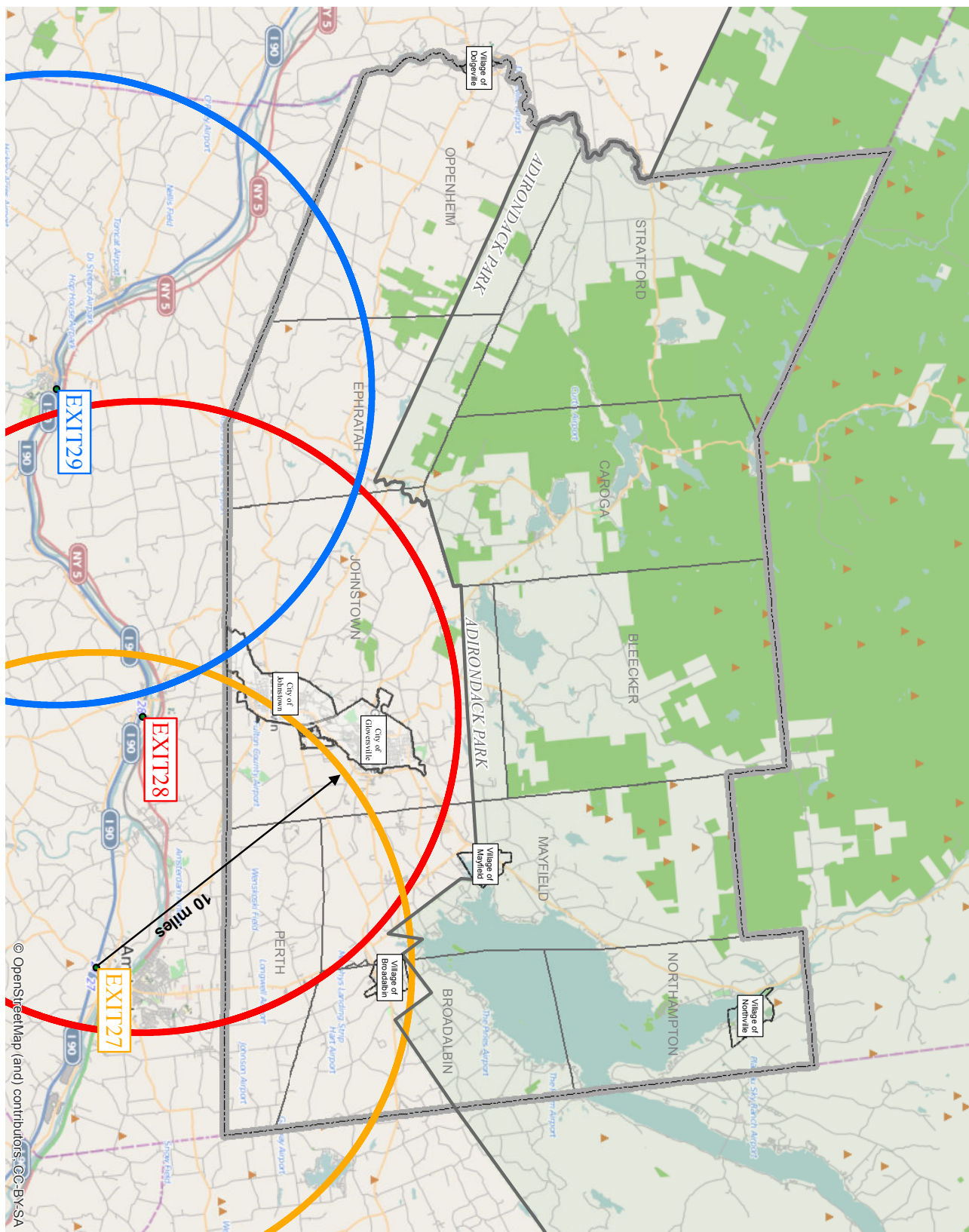
TRACKS OF LAND WITH DEVELOPMENT POTENTIAL IN SOUTHEASTERN FULTON COUNTY

SMART Waters: A Regional Model for Water and Wastewater Services in Fulton County, NY

Source: Fulton County Planning Department

NOT TO SCALE

FIGURE:
5-4



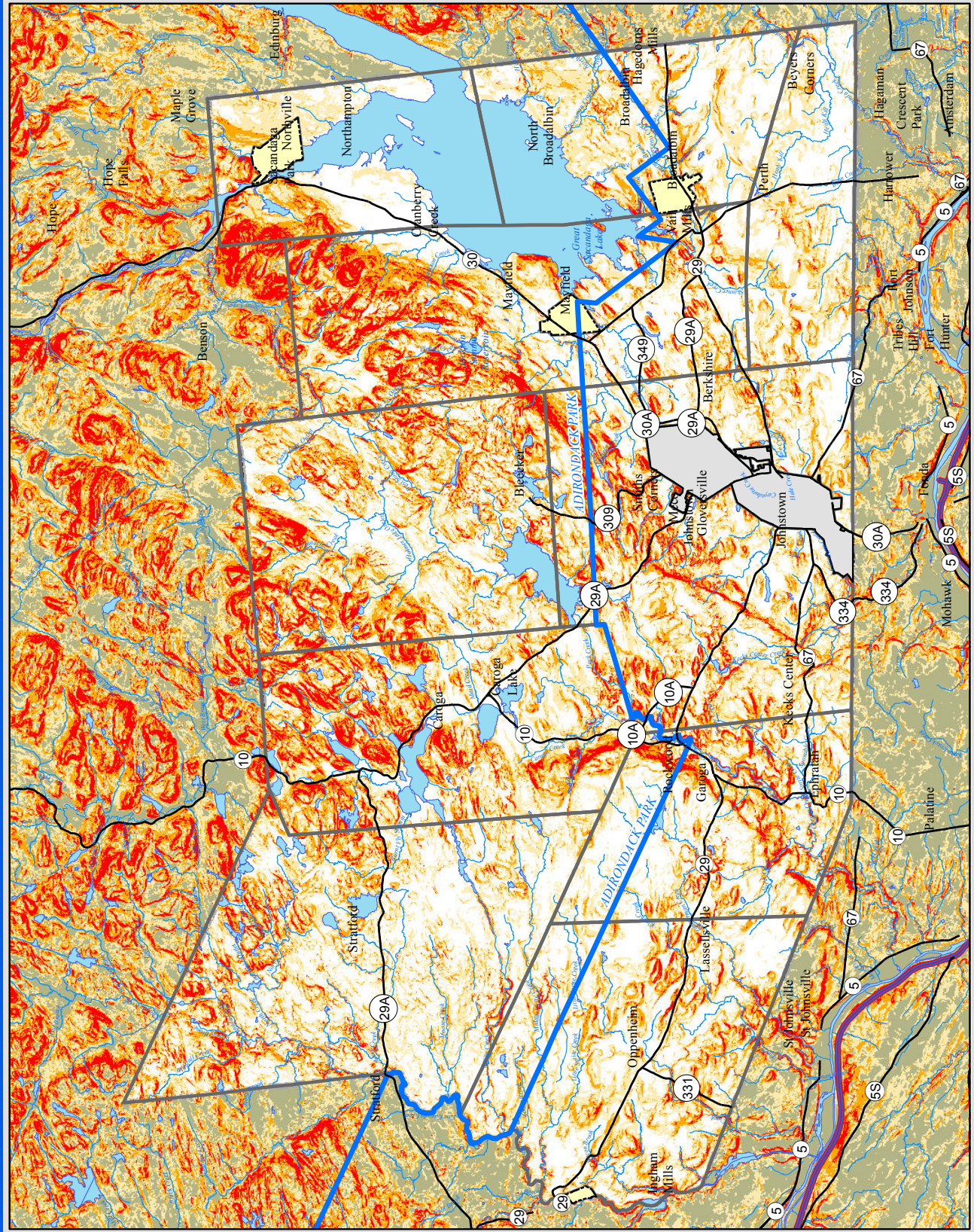
INTERSTATE ACCESS TO FULTON COUNTY

SMART Waters: A Regional Model for Water and Wastewater Services in Fulton County, NY

Basemap Source: OpenStreetMap

NOT TO SCALE

**FIGURE:
 5-5**



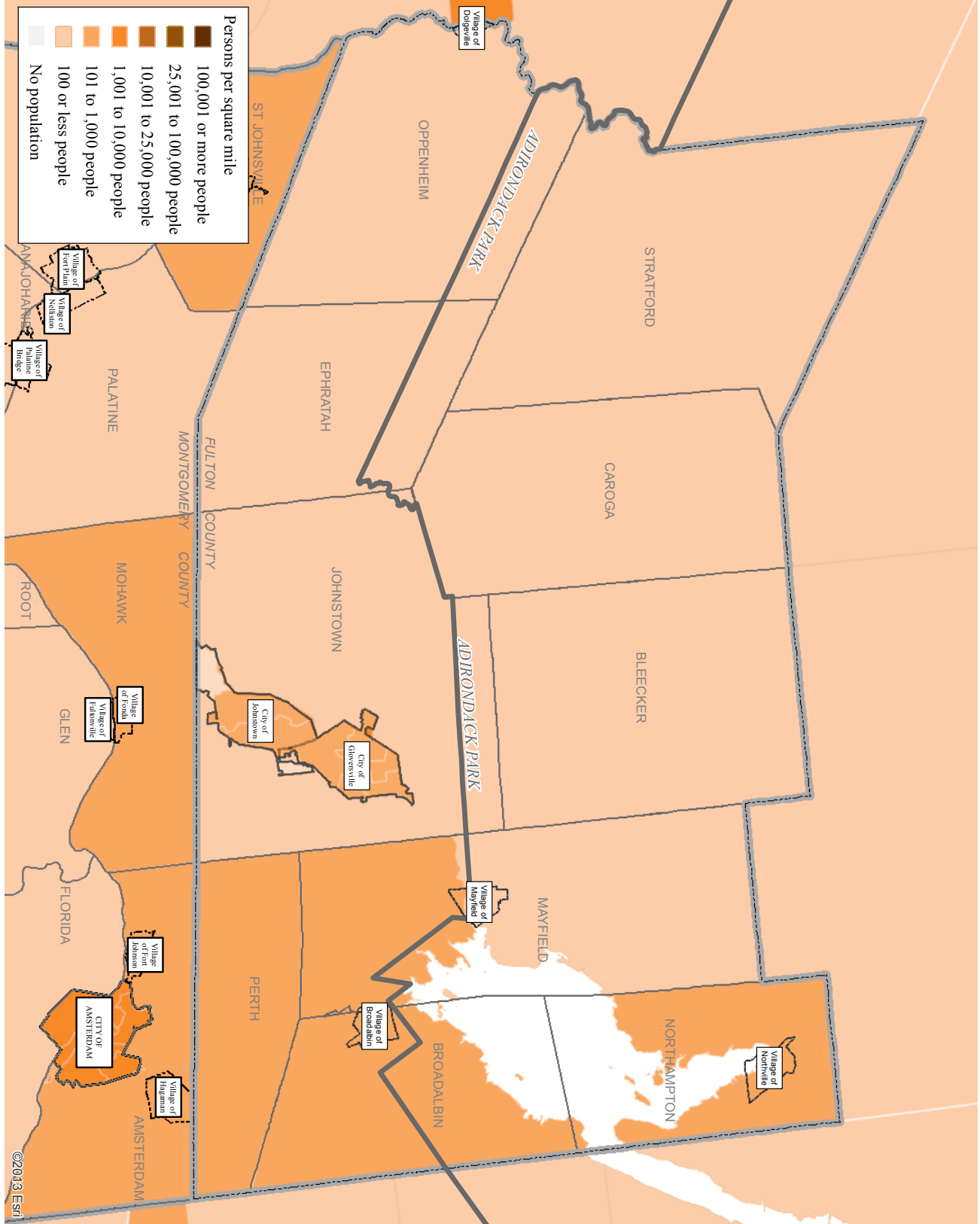
TOPOGRAPHIC ILLUSTRATION OF FULTON COUNTY

SMART Waters: A Regional Model for Water and Wastewater Services in Fulton County, NY

Basemap Source: OpenStreetMap

NOT TO SCALE

**FIGURE:
5-6**



POPULATION DENSITY OF FULTON COUNTY

SMART Waters: A Regional Model for Water and Wastewater Services in Fulton County, NY

Source: Fulton County Planning Department

NOT TO SCALE

**FIGURE:
5-7**



5.2 Water Supply

As noted earlier, there are three options to obtain water supply capacity to use in a regional water system:

1. Work with existing municipal water systems
2. Develop a new groundwater supplies
3. Develop a new surface water supplies

The practical availability of each of these options will depend on many factors beyond the scope of this Report including the timing, size, and location of future development and the ability to fund water system infrastructure improvements.

The availability of these options will be limited to some extent by the operational structure of the regional water and wastewater system. For example, should the County choose to advance a system of coordinated inter-municipal agreements there would likely be a higher reliance on the individual municipalities to plan for and develop future capacities and infrastructure rather than the County taking the lead.

5.2.1 Existing Municipal Water Systems

There are several municipalities operating existing water supply systems within and adjacent to Fulton County. Acquiring excess capacity from these existing municipal water supply systems represents a cost effective approach to obtaining capacities for a regional water system. There are three options available for obtaining water capacity from existing municipalities for a regional water system:

1. Purchasing excess capacity.
2. Purchasing all or a portion of the existing water system
3. Leasing all or a portion of the existing water system

Certainly the willingness and practical feasibility of pursuing any of these options will depend on the specific municipality and system. The following sections will review the three options for purchasing water from an existing supply with references to specific municipalities where appropriate.

5.2.1.1 Purchase Excess Capacity

Cities of Gloversville and Johnstown

The Cities of Gloversville and Johnstown currently operate water supply and distribution facilities serving each of the respective Cities with limited service extending beyond their municipal boundaries. The close proximity of the two Cities, relative to the area of southeastern Fulton County having the highest potential for future development, makes a connection to the existing infrastructure of the two Cities an attractive option.



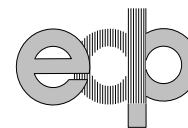
As noted in Section 2.2.2, at this time, the City of Johnstown system appears to have little excess supply capacity available for a regional water system. The City of Gloversville on the other hand maintains a water supply system with over 3 million gallons a day (mgd) of excess supply capacity and potentially over 5 mgd of excess treatment capacity. The City could realize financial benefits through the bulk sale of water to neighboring municipalities including a regional water system.

The Cities of Gloversville and Johnstown could both benefit by interconnecting of their systems. The City of Gloversville could realize financial gains through the bulk sale of water to the City of Johnstown. From an engineering perspective, both water systems could potentially benefit from active interconnectivity in terms of meeting peak flow and storage demands, improved system hydraulics and reduced infrastructure costs. The Stearns and Wheler 1991 report references an existing emergency only connection between the Cities reportedly capable of passing 800,000 gpd.

The use of inter-municipal agreements to facilitate the sale of water between municipalities is a common practice across the State. Of the eight regional water systems reviewed for this Report, all utilize some form of inter-municipal agreements to purchase and/or sell water to or from neighboring systems. This practice avoids the need for each municipality to develop relatively expensive source and treatment capacities. Those systems which have developed excess supply and treatment capabilities realize an economy of scale with respect to capital and operating cost versus water production and choose to sell excess capacities at wholesale rates to neighboring communities.

In the case of Genesee, Wayne, Rensselaer, Cayuga and Livingston Counties their regional water systems have no water production capabilities of their own. They rely exclusively on inter-municipal agreements with neighboring Counties, Towns, or Villages for water supply. In most cases, the regional system still operates and maintains their own infrastructure but relies on others for supply.

As noted in Section 2.1.2 the City of Gloversville continues to experience a decline in population and manufacturing business resulting in reduced water consumption. Between 2003 and 2012 the yearly water consumption in the City dropped nearly 23%. The City of Gloversville's 2012 peak daily demand was 2.88 mgd; with an existing safe reservoir yield of 6 mgd the system operated at less than 50% of the available capacity. Given that the incremental operation and maintenance cost to increase water production is typically small compared with the overall operational budget of the system, the City could generate important new revenues through the wholesale of excess water supply capacity.



A basic analysis was performed to estimate the potential revenue that could be generated from wholesale water sales by the City of Gloversville. The City's 2012 peak daily demand was 2.88 mgd leaving approximately 3 mgd of excess capacity based on a safe reservoir yield of 6 mgd. Conservatively assuming a peak daily flow of 2 times the average daily flow, would leave 1.5 mgd of excess capacity available on an annual average basis. Applying an average wholesale water rate of \$2.40 per 1,000 gallons (average based on available rates found during EDP's review of comparable regional systems) the City of Gloversville could generate over \$1.3 million dollars annually in water sales to neighboring municipalities and/or a regional Fulton County system.

Table 5-1 summarizes potential wholesale water sales the City of Gloversville could have generated based on water usage for the years 2012, 2007, and 2002. The potential wholesale water sales represent an increase in annual water sales of approximately 150%. It is important to note that the potential sales estimated herein are limited to the existing safe yield of the reservoir system. With a permitted treatment capacity of 12 mgd there is the potential to realize significantly higher revenues in the future with an increase in the reservoir capacities.

Table 5-1: Potential Revenue for the City of Gloversville from Wholesale Water Sales

	2012	2007	2002
Water Consumption (million gallons)	636.2	765.6	823.7
Revenue from Water Sales	\$2,217,530	\$2,408,501	\$1,706,907
Net Revenue or (Expense)	\$326,321	\$340,311	(\$433,126)
Potential Wholesale Water Sales	\$1,357,800	\$1,051,200	\$919,800

By selling water at wholesale rates, the City of Gloversville could generate critical new revenues without significant increases in operational costs. The City would potentially take on one additional customer with no responsibility relative to the operation and maintenance of the purchaser's water distribution system.

As previously noted, the City of Johnstown's minimal excess water capacity limits its ability to supply water to a regional water system unless the City acquires or develops additional water supply capacities. However, should the Cities of Johnstown and Gloversville work together cooperatively and integrate their water systems, additional options could be available relative to potential connection points between the City systems and a regional water system. Figure 5-3 depicts the approximate location of water system infrastructure extending from the two Cities into the southeastern area of Fulton County. Given the unpredictable nature of future land development having as many options available as possible with respect to potential future connection points would facilitate the extension of water system infrastructure.



Villages of Broadalbin and Mayfield

As noted in Section 2, the quantity of water potentially available from the Village systems is limited and significantly less than what could be available from the City of Gloversville. However, it is not possible to predict, at this time, exactly where future land development will occur and how development would progress. Therefore, it is important to have as many options available as possible with respect to the development of future water system infrastructure. As more and more land development occurs, various pieces of water system infrastructure scattered around the County could be integrated into a larger system. This SMART water system planning is one of the primary benefits that a regional Fulton County system could offer.

As discussed in detail in Section 3, there are numerous examples across the State of regional County systems purchasing water from individual municipalities that continue to own and operate their systems. Some of the reasons for pursuing this alternative include:

- Individual municipalities may feel strongly about continuing to own, operate, and maintain their existing systems.
- Individual municipalities can generate extra revenue through the wholesale of water to a regional system.
- Limits the capital investment necessary for a regional system provider to extend water service to a wider area of the County.

Given the Village of Broadalbin's excess water system capacity and declining usage, the Village could generate additional revenues through the wholesale of excess water supply capacity.

A basic analysis was performed to estimate the potential revenue that could be generated from wholesale water sales by the Village of Broadalbin. The Village's peak daily demand was 0.120 mgd in 2012 leaving approximately 0.24 mgd of excess capacity based on a permitted safe yield of 0.361 mgd. Conservatively assuming a peak daily flow of 2 times the average daily flow would leave 0.120 mgd of excess capacity available on an annual average basis. Applying an average wholesale water rate of \$2.40 per 1,000 gallons (average based on available rates found during EDP's review of comparable regional systems) the Village of Broadalbin could generate over \$100,000 annually in water sales to neighboring municipalities and/or a regional water system.

In 2012 the Village of Broadalbin generated revenues of \$85,368 in water sales. By selling water wholesale, the Village of Broadalbin has the potential to increase revenue of water sales by over 200%. The Village would potentially take on one additional customer with no responsibility relative to the operation and maintenance of the purchaser's water system.



At this time the Village of Mayfield water system does not have surplus capacity available to offer to a regional Fulton County system. However, given the Village's use of groundwater wells, additional wells could be developed to provide the Village with more capacity.

Village of Northville and Town of Northampton

The Village of Northville and the Town of Northampton's water systems have surplus capacities; while the available capacities are limited compared with larger systems, the systems have room for expansion. Given their location relative to the area of southeastern Fulton County that is the immediate focus of future infrastructure development, it may not be practical or cost effective to integrate these systems into a regional system. While the water systems of Northville and Northampton may not directly benefit southeastern Fulton County, the ability to expand these systems locally may help to promote land development in the areas immediately surrounding the existing service areas of these systems.

Additionally, many of the same regional concepts could be applied and, depending on the disposition of a future regional system, there may be an opportunity for a regional service provider to assist these communities with operation and maintenance of their systems. The Village of Northville and Town of Northampton are neighboring communities with water distribution systems that are in close proximity. The systems could realize potential benefits from an interconnection between the two systems. Interconnecting water systems can provide multiple benefits from improved system hydraulics to emergency supplies.

5.2.1.2 Purchase All or a Portion of an Existing Water System

Another option for developing a regional water system could be through the purchase of an existing municipal water supply and treatment system or systems. As observed during EDP's research, there are examples across New York State of regional systems formed through the purchase of a smaller individual municipalities water supply and treatment systems.

In Dutchess County for example, the Dutchess County Water and Wastewater Authority purchased the assets of the Hyde Park Fire and Water District. The Hyde Park Water Filtration Plant is capable of treating 2.8 mgd (smaller in size than either the Gloversville or Johnstown systems). As their regional system has grown, they have developed other water supply sources to accommodate development needs in other areas of the County.

To begin this process, the County would need to gauge the willingness of municipalities to sell their existing water system infrastructure. If there is an interest, the next step would be to determine the value of the water system infrastructure. Depending on the desire or preference of individual municipalities, the County could potentially purchase the infrastructure of an entire water system and take over all water system operations or only purchase the water supply and treatment facilities. If purchasing the water supply and treatment facilities, the



existing municipality would operate and maintain the water distribution system and the County would operate and maintain the water supply and treatment facilities much in the same manner that the Gloversville-Johnstown Joint Wastewater Treatment Facility operates.

One of the primary concerns voiced in the Villages, with respect to a regional water and/or wastewater system, was that they share workforce between the Village water and/or wastewater facilities and the Department of Public Works (DPW). Village DPW employees often split time between water and/or wastewater related activities and other DPW responsibilities. If the Villages were to sell their water supply and/or treatment systems to a regional county system, there is a concern that the DPW workforce would need to be reduced and the reduction in manpower may create challenges with other DPW responsibilities.

These concerns are not unique or insurmountable. Similar concerns and issues were found to exist in other NYS communities that created regional systems. The key is to communicate and work to identify a win-win approach for both parties.

Another example of a flexible arrangement between the regional government and individual municipalities can be observed in Genesee County. In Genesee County, the County acts as the regional water system coordinator. Prior to the County's involvement the City of Batavia owned and operated the largest water treatment and distribution system in the County. As City and County officials discussed creation of a regional water system, one of the City's concerns was maintaining their workforce involved in the operation of the water treatment facility. To overcome this issue, Genesee County leased the water treatment facility from the City; however, the County contracts with the City for operation and maintenance of the facility. A similar arrangement could be explored with the existing municipal systems in Fulton County.

5.2.1.3 Lease All or a Portion of an Existing Water System

A third option for developing a regional Fulton County system could be through lease agreements to operate and maintain an existing water supply and treatment system or systems. As discovered through EDP's review of regional water systems in New York State, depending on the specific situation and needs of individual communities, there are a number of scenarios involving the leasing of existing facilities by which a regional system can accommodate the needs of individual communities.

Wayne County provides an example of flexibility between the regional water supply entity (the Wayne County Water and Sewer Authority) (WCWSA) and the individual municipalities it serves. The regional Wayne County Water and Sewer Authority does not own any of the system's water treatment facilities and owns only limited portions of the system's distribution system. At the discretion of the individual municipalities, the WCWSA enters into lease agreements with local municipal water wholesale suppliers (i.e., existing City, Village, and Town systems within the County) to operate and maintain their water supply and treatment facilities



and/or their distribution system infrastructure. Some of the individual municipalities within the regional system choose to continue to own, operate, and maintain their systems and wholesale water to the WCWSA. This arrangement allows the individual municipalities flexibility with respect to how they choose to work with the regional water system.

The WCWSA does own portions of the system's distribution system. The WCWSA, acting as the coordinator of future water system growth plans, may choose to install new water distribution system infrastructure to improve the performance of the existing system or expand the system to serve future land development. Working with and at the discretion of individual municipalities within the system the WCWSA may also make significant repairs to existing distribution system infrastructure and would in turn assume ownership of that infrastructure.

5.2.2 City of Amsterdam

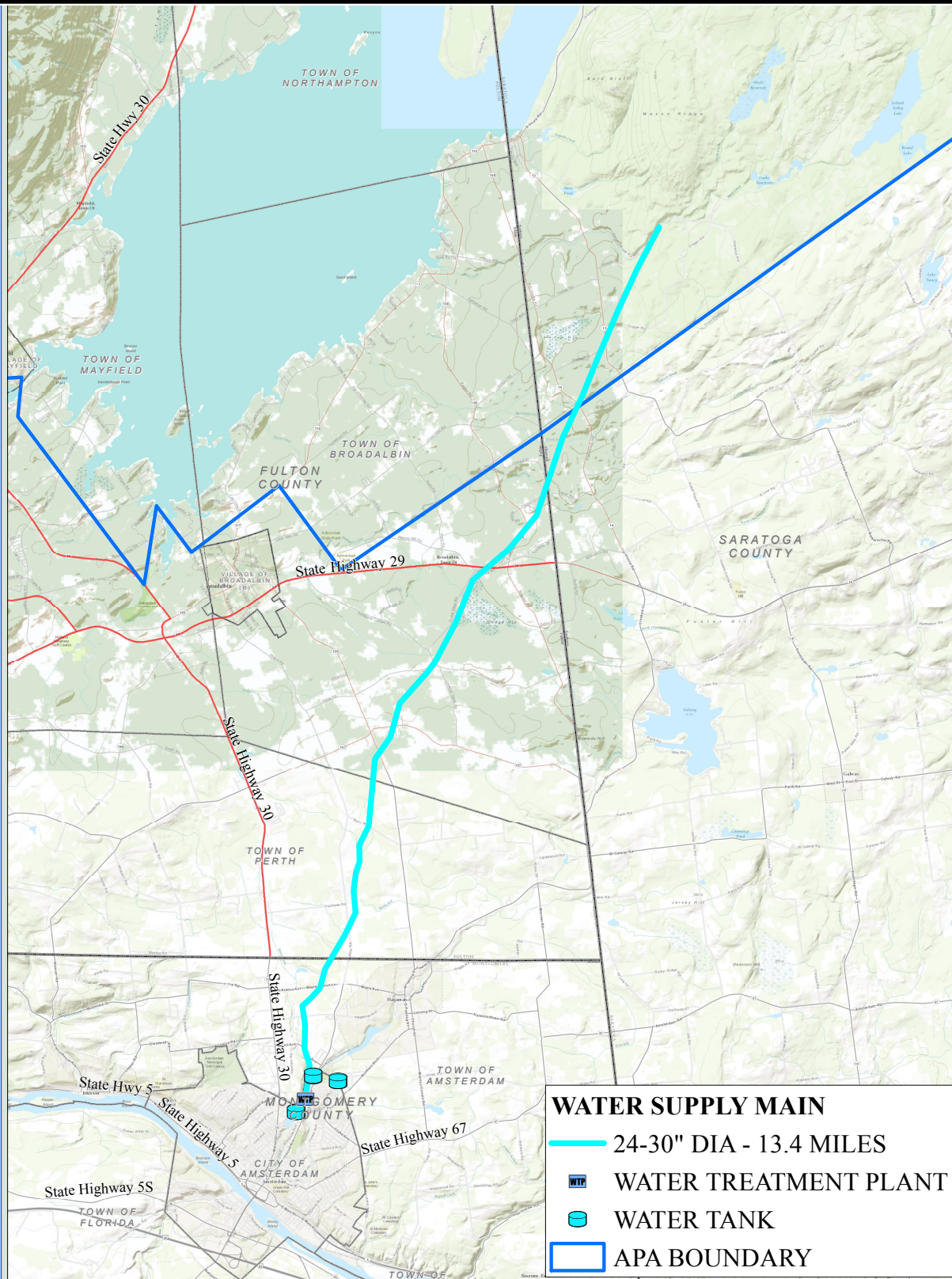
The City of Amsterdam owns and operates a regional water supply and distribution system serving a population of approximately 18,000.

The City of Amsterdam maintains inter-municipal agreements with the Town of Amsterdam and the Town of Florida to provide water service. The respective Towns are responsible for operation and maintenance of their water distribution systems.

Potential options available for extending water service, supplied by the City of Amsterdam, within southeastern Fulton County include:

1. Purchasing raw water from the City through a connection to the existing raw water transmission main and building a water filtration plant to serve a Fulton County regional water system.
2. Purchasing finish water from the City of Amsterdam with a connection through the Town of Amsterdam's existing water distribution system.

As shown in Figure 5-8, the City of Amsterdam's raw water transmission main passes through the Fulton County Towns of Broadalbin and Perth. A regional Fulton County water system could potentially purchase raw water from the City of Amsterdam with a connection to the existing transmission main. The regional Fulton County provider would need to construct a new water treatment facility or pipe the raw water to an existing water treatment facility such as the City of Gloversville.



CITY OF AMSTERDAM WATER SUPPLY SCHEMATIC

SMART Waters: A Regional Model for Water and Wastewater Services in Fulton County, NY

Source: Fulton County Planning Department

NOT TO SCALE

**FIGURE:
 5-8**



The Town of Amsterdam maintains a water distribution system with 12 inch and 20 inch water mains installed to the Fulton County line along Route 30. A regional Fulton County water system could potentially purchase finish water from the City of Amsterdam through the Town of Amsterdam's infrastructure. This concept would likely involve a master meter installed at the Town of Amsterdam line and the regional Fulton County provider would likely purchase water at a wholesale rate from the City of Amsterdam. The regional Fulton County provider would need to construct distribution system infrastructure to serve new users within Fulton County.

The third potential alternative would involve the City of Amsterdam constructing a new water treatment facility along their existing raw water transmission main to serve a regional Fulton County system. The City of Amsterdam would provide finish water and the regional Fulton County provider would need to construct distribution system infrastructure to serve new users.

Fulton County has engaged in initial discussions with City of Amsterdam officials regarding the City's interest in supplying water to a regional water service provider. The City has expressed an interest in providing water capacity to a Fulton County regional water system.

The City of Amsterdam had previously prepared a conceptual plan for developing a second water treatment facility along the existing raw water transmission main in Fulton County. The conceptual plan was developed with an interest in supplying water to Fulton County.

5.2.3 Develop New Groundwater Supply

As previously discussed, the southeastern region of the County is the area with the highest potential for future land development. However, it is not possible to predict exactly where future land development will occur and how development may progress; therefore, planning future water and wastewater infrastructure is challenging. Given this scenario, the use of groundwater wells as a future water supply source is an alternative that may provide cost advantages regardless of the availability of other water supplies (i.e., the Cities of Gloversville, Johnstown, Amsterdam or the Village of Broadalbin).

Until the middle of the 20th century, public water supplies almost exclusively relied on surface water sources with relatively minor treatment involved. Having already established these sources, as regulations tightened, many municipalities simply phased in water treatment facilities to maintain their existing surface water supplies. However, the use of groundwater wells has proven to be a very cost effective means of supplying drinking water with capital and operational costs up to 10 times lower than systems relying on surface water treatment.

The use of groundwater wells for water supply is a common practice in Fulton County. Four existing municipal water systems currently rely on groundwater wells as their water supply.



While groundwater wells are most common in smaller systems, larger systems also rely on groundwater wells. In this area, the Cities of Saratoga, Rotterdam, Guilderland, and Schenectady, just to name a few, all utilize groundwater wells in their water systems. The City of Schenectady, in fact, relies exclusively on groundwater wells for their water supply. In Dutchess County, the Dutchess County Water and Wastewater Authority relies on a series of groundwater wells in addition to their surface water supply.

The challenge in developing groundwater wells as a water supply is identifying locations with suitable geology to support withdrawal of adequate quantities of groundwater. In the early 1970's, an investigation in the groundwater resources of Fulton County was performed by James R. Dunn & Associates, Inc. (Dunn 1971). The Report evaluated available hydrologic and geologic data relative to potential groundwater water supply development in Fulton County. The Report recommended that "All possibilities for ground-water development of community water supplies in Fulton County should be thoroughly explored and professionally evaluated before surface water distribution systems are designed. In general, where sufficient quantities of groundwater are available, a municipal ground-water system can be completed at a much lower cost than a surface water system".

Figure 5-9 presents a map of potential groundwater availability in bedrock as obtained from the Dunn 1971 Report. The Report suggests that the potential for groundwater yield in areas immediately east of Johnstown and Gloversville is generally low; however, a band of potentially high yield bedrock is identified, generally along the Route 30 corridor, through Perth and into Broadalbin. The report also identifies a fault zone in the Broadalbin area with potentially high water yields of 100 gpm or more.

A typical groundwater supply system includes groundwater wells, disinfection (typically through chlorination), storage facilities either at grade or elevated, and a distribution pipe network. As future water demands require the development of additional supply, new groundwater wells can be integrated with existing system at remote locations within the distribution network (i.e., groundwater well development does not need to be concentrated in a single area).

While the Dunn Report suggested that the potential for groundwater yield immediately east of the Cities of Johnstown and Gloversville is generally low, it is important to note that the focus of that Report was on the availability of groundwater in bedrock. The mapping and analysis of overburden deposits (soil above the bedrock) was not part of the scope of the Report. The Dunn Report did identify a large outwash complex (well stratified sands) extending from east of Gloversville to north of Broadalbin which may serve as good aquifers. As noted in a subsequent section, the Tryon Facility, located east of the City of Johnstown, was served with groundwater wells.



In summary, the use of groundwater wells as a potential water supply for a regional Fulton County water system represents a viable option to consider depending on the location of future development and availability of groundwater supplies. As land development occurs, the proximity and availability of extending water system infrastructure from other supply sources should be evaluated along with the cost associated with developing a new groundwater supply system at the proposed point of use. The system could be potentially expanded to meet future needs and serve additional customers.

**Groundwater Supply at the Tryon Technology Park and Incubator Center**

New York State constructed the Tryon Juvenile Detention Facility on the north side of CR107 in the mid 1960's. At that time, water service for the Tryon Campus was provided by an onsite groundwater well. The onsite well provided water service from the 1960's to the early 1990's when municipal water became available. Municipal water and wastewater services were extended in 1990 to the new State Prison that was constructed on Maloney Road to the west of Tryon. Once municipal water and wastewater services were extended to the new State Prison, the State decided to extend these services to Tryon. When municipal water service was extended to Tryon in the early 1990's, the use of the groundwater wells was terminated.

This piece of history is notable in that it acknowledges that sufficient groundwater supply was developed at the former Tryon Campus to supply up to 50,000 gallons/day of potable water. The original groundwater supply at Tryon was reportedly provided via a 30 ft deep dug well. Current standards would require drilled wells with a minimum of 50 ft of casing for use as municipal water supply wells. While the original dug well would not satisfy current requirements it is worth exploring groundwater supply development at Tryon. Figure 5-10 presents an overview of Tryon and identifies the location of the previously used groundwater well as well as the location of a potential unconfined aquifer as identified by the NYSDEC.

The current water and wastewater services at Tryon were extended from the municipal services originally installed to the Hale Creek Correctional Facility on Maloney Road. The water service comes from the elevated tank on the Hale Creek property, runs along Maloney Road to CR107, runs east along CR107 to the Tryon property and then enters the Tryon site along the western side of the property. The wastewater force main discharges to a pump station on the Hale Creek property, runs along Maloney Road and CR107 to the western edge of the Tryon property where it runs to the wastewater pump station servicing Tryon.

New York State recently advised Fulton County that since Tryon is no longer a State facility, it will require that the water and wastewater lines servicing Tryon be disconnected from Hale Creek. This requirement by New York State will require infrastructure changes/improvements to be made.

For wastewater, the wastewater line running from Tryon to the pump station at Hale Creek will need to be disconnected and rerouted to bypass that pump station. This will require the re-routing of a section of sanitary sewer force main and the installation of larger wastewater pumps at the pump station at Tryon.

For water, the water line feeding Tryon from the elevated tank at Hale Creek will need to be disconnected. This disconnection will result in two (2) significant water system improvements having to be made:

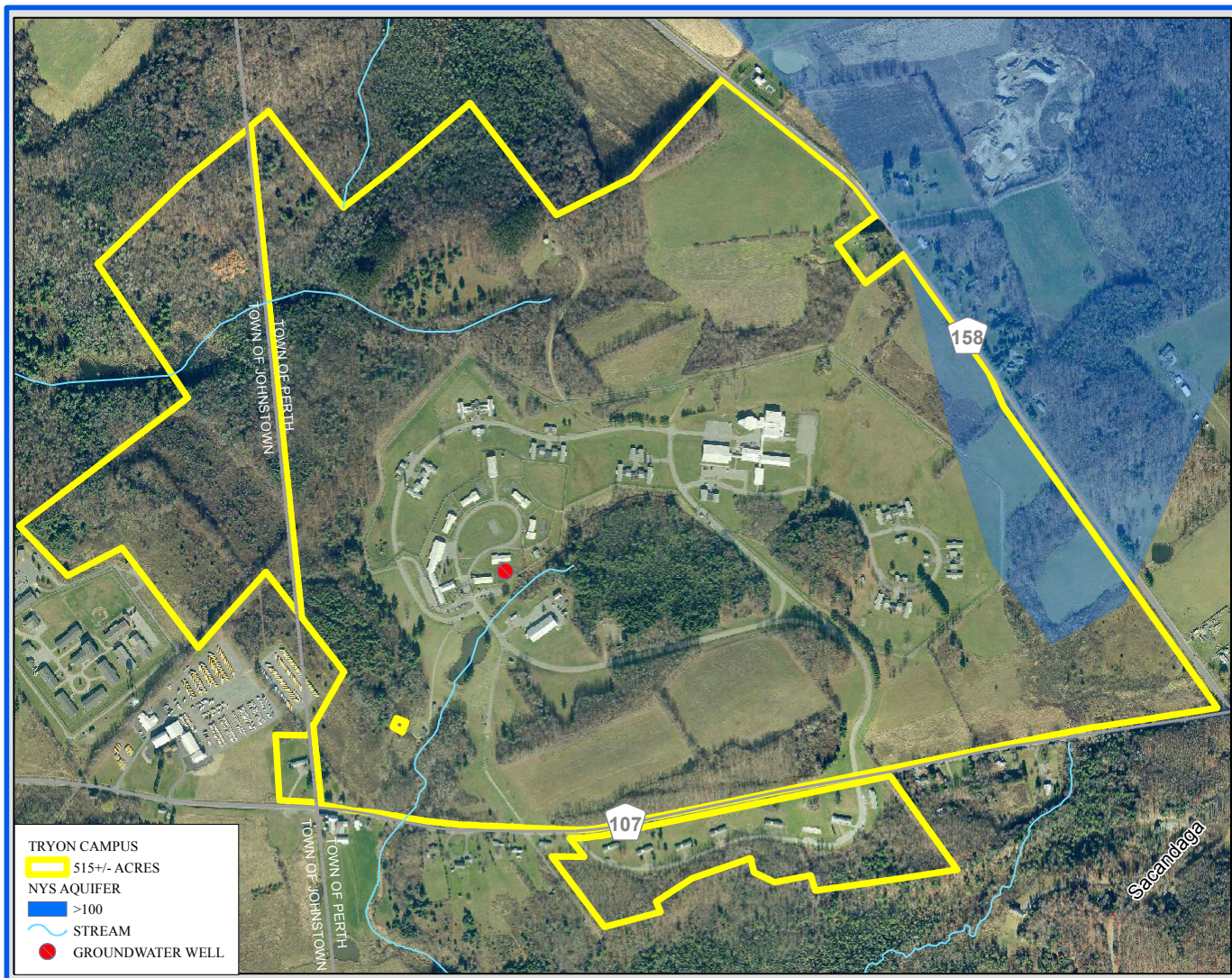
1. Installation of a new elevated tank at Tryon to maintain water pressure in water system.



2. Installation of a new water booster pump station to pump water up to elevated tank.

Given that new water supply infrastructure will be required at the Tryon Facility, EDP recommends that Fulton County:

1. Conduct a study to verify the quantity and quality of groundwater that may be available at the former Tryon site that could be used as a municipal water supply to serve future development at the Tryon site and surrounding area.
2. Pending the outcome of the groundwater supply study, locate and size the elevated water tank to not only service the needs of the Tryon site but also surrounding areas.



Tryon Facility - Groundwater Resource Potential

SMART Waters: A Regional Model for Water and Wastewater Services in Fulton County, NY

Source: Fulton County Planning Department

NOT TO SCALE

**FIGURE:
5-10**



5.2.4 Develop Great Sacandaga Lake as a New Surface Supply

A final alternative explored relative to water supply available to a future regional Fulton County system is the Great Sacandaga Lake as a new surface water source. The Great Sacandaga Lake is situated in eastern Fulton County generally just to the north of the region in southeastern Fulton County where future land development is most anticipated. As noted in the previous section, the costs associated with the development and operation of surface water supplies typically are higher than groundwater supplies; however, depending on the availability of groundwater resources and the ability and willingness of existing water systems to supply adequate water to a regional Fulton County system, the development of the Great Sacandaga Lake as a regional water supply source could be a long term alternative worth consideration.

The Great Sacandaga Lake, formed in 1930, is a 37-billion ft³ water regulatory reservoir operated by the Hudson River Black River Regulating District (HRBRRD). Article 15 Title 21 Section 2109 of Environmental Conservation Law authorizes the Hudson River Black River Regulating District to contract to sell water to these counties located within the District which includes Fulton County. In the early 1980's the Fulton County Board of Supervisors first approached the HRBRRD regarding having the District supply water to Fulton County for drinking water purposes. The request was met positively; however, no formal action was taken by Fulton County at that time.

In September 2013, the HRBRRD was once again approached by Fulton County to explore the possibility of utilizing the Great Sacandaga Lake as a source for municipal water supply. The request again received a positive response from the HRBRRD and a meeting was held to discuss the concept. The HRBRRD expressed its interest in selling raw water to Fulton County as another source of revenue.

The volume of water that would likely be used by a regional Fulton County water system is minimal compared with the typical flow rates through the reservoir. Average release rates vary throughout the year; however, typical average daily release rates are approximately 4,000 cubic feet per second (cfs) or 2,585,088,000 gallons per day. Water withdrawal by a future regional Fulton County system at a rate of 1 million gallons per day (mgd) would represent 0.04% of the amount of water typically released on a daily basis from the Great Sacandaga Lake. Given the relatively insignificant water usage by a regional water system, on a conceptual level, the HRBRRD did not believe this would impact other HRBRRD operations.

Fulton County actually already maintains an agreement with the HRBRRD for withdrawal of water from the Great Sacandaga Lake. The Village of Northville utilizes a pair of groundwater wells for their drinking water supply. The groundwater wells are installed on HRBRRD lands along the Great Sacandaga Lake north of the Village. Due to the fact that these wells are installed on lands of the HRBRRD, the Village must purchase the water from the HRBRRD. The



HRBRRD's governing legislation limits their ability to sell water to surrounding Counties; therefore, the agreement for the Village of Northville to withdrawal water is between Fulton County and the HRBRRD. The rate at which the Village (via Fulton County) purchases water from the HRBRRD is modified annually based on the Consumer Price Index. The rate was initially \$0.05 per thousand gallons in 1997 and is now \$0.075 per thousand gallons.

The HRBRRD advised that the first step for Fulton County to take to pursue obtaining water from the Great Sacandaga Lake would be to develop an engineering report and submit it to the HRBRRD for review. The report would identify the volume of water withdrawal requested and identify how water would be withdrawn from the lake. A future intake location would likely be at a location along the southwestern shoreline of the lake in the Town of Broadalbin or Mayfield.

The development of the Great Sacandaga Lake as a water source for a new regional water system would require treatment of the raw water at a water treatment facility. Two options potentially available for raw water treatment include:

1. Utilize the existing City of Gloversville water treatment facility
2. Construct and operate a new water treatment facility

The City of Gloversville maintains a water treatment facility with a potential treatment capacity (12 mgd) that exceeds the surface water supply capacity (6 mgd) of the system. The excess treatment capacity of the Gloversville facility could be used to treat raw water from the Great Sacandaga Lake. A raw water transmission main from the Great Sacandaga Lake could be installed directly to the City's treatment facility or to the Jackson Summit Reservoir.

A new water treatment facility would likely be located in close proximity to the Great Sacandaga Lake in the Town of Mayfield or Broadalbin. Treated water would be transmitted through a new distribution system to southeastern Fulton County. This option would likely involve a significant capital expense and substantial land development / water demand would be necessary to justify this alternative.

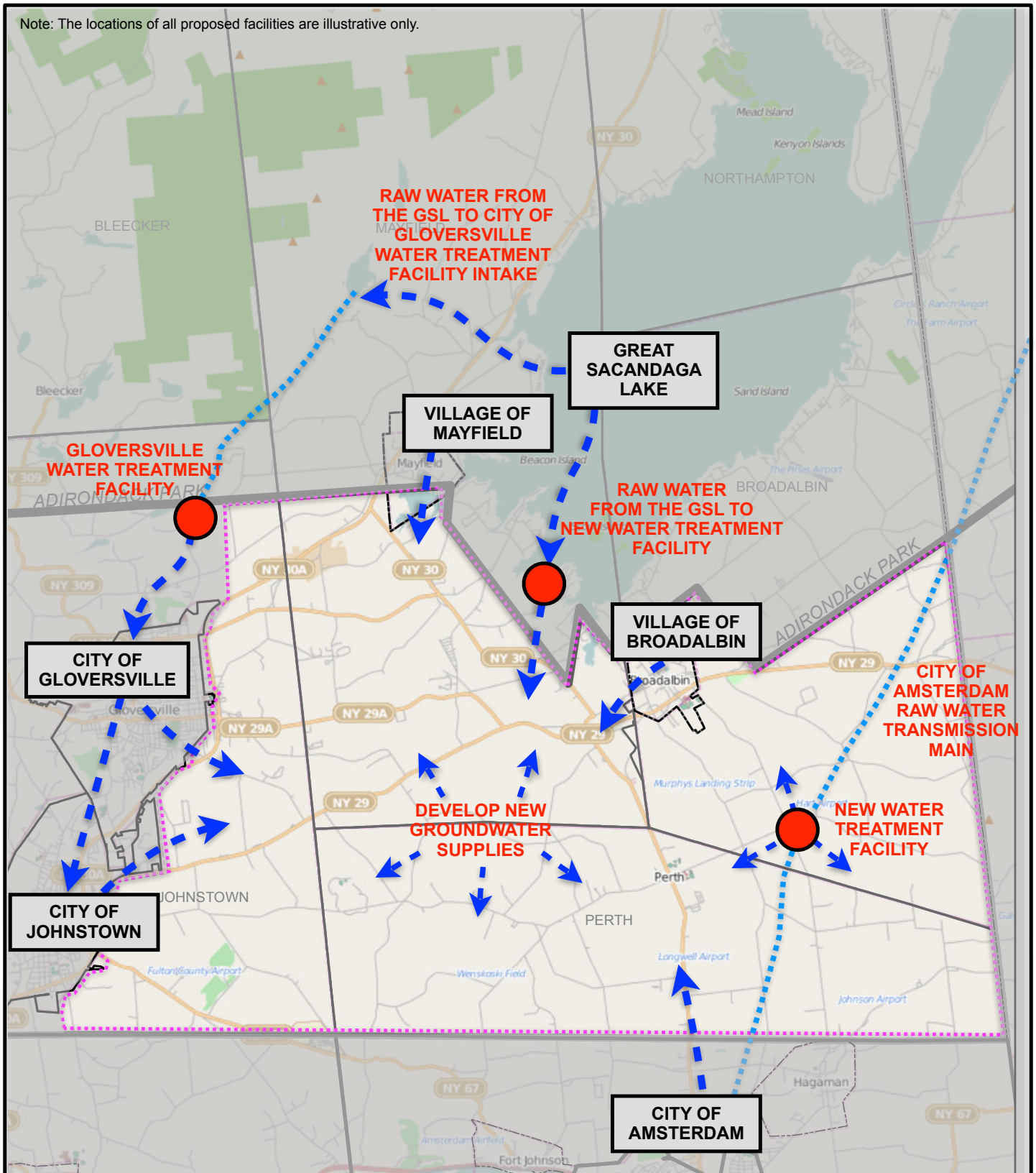
In order to pursue the use of the Great Sacandaga Lake as a surface water supply, Fulton County must engage the services of an engineer to prepare an engineering evaluation / report that would:

1. Identify the volume of water Fulton County would like to withdraw from the lake
2. The location for a water intake pipe
3. The route of the intake pipe across HRBRRD lands
4. The size of the intake pipe
5. What right-of-ways or easements may be needed
6. What federal and/or State permits may be required. Potential permits include:
 - a. APA



- b. NYSDEC
 - c. NYSOPRHP
 - d. Army Corps of Engineers
 - e. FERC
7. Estimated construction costs

Note: The locations of all proposed facilities are illustrative only.



POTENTIAL WATER SUPPLY OPTIONS FOR SOUTHEASTERN FULTON COUNTY

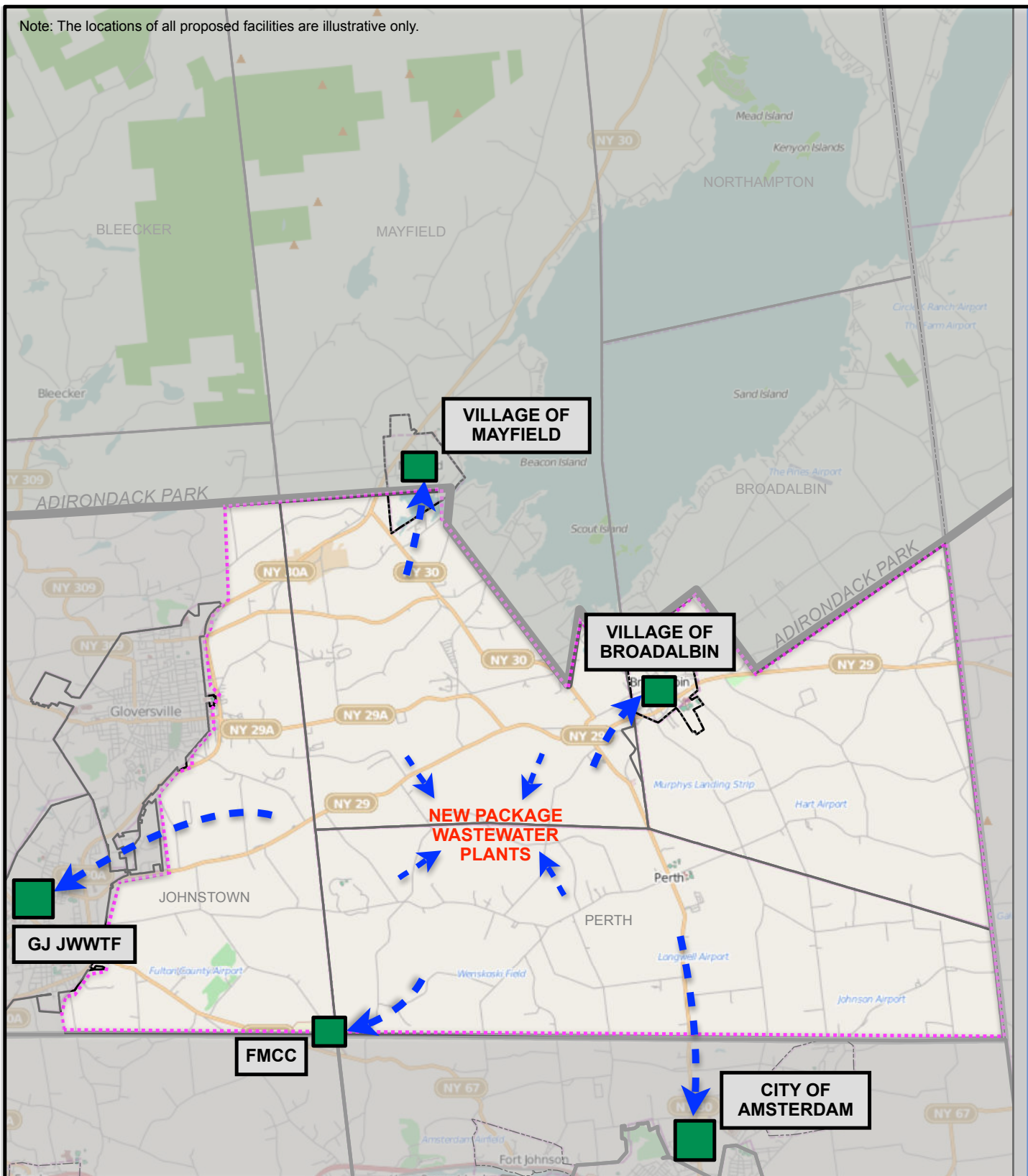
SMART Waters: A Regional Model for Water and Wastewater Services in Fulton County, NY

Basemap Source: OpenStreetMap

NOT TO SCALE

**FIGURE:
5-11**

Note: The locations of all proposed facilities are illustrative only.



POTENTIAL WASTEWATER TREATMENT OPTIONS FOR SOUTHEASTERN FULTON COUNTY

SMART Waters: A Regional Model for Water and Wastewater Services in Fulton County, NY

Basemap Source: OpenStreetMap

NOT TO SCALE

**FIGURE:
5-12**



5.3 Wastewater Treatment

As with the potential water supply options, there are multiple alternatives to consider for wastewater treatment with a regional Fulton County system. In general there are two basic options for wastewater treatment as follows:

1. Work with existing municipal wastewater systems.
2. Develop a new wastewater treatment facility.
 - a. Packaged Treatment Plant
 - b. Full scale

The southeastern Fulton County region is positioned with several existing wastewater collection and treatment facilities around the fringes of the area. As with the water supply alternatives, the practicality of utilizing an existing treatment facility will depend on many factors. First, there must be a willingness by the owner of the existing facility to provide service. Second and, equally important, there must be an ability to cost effectively extend an existing collection system to serve new land development.

Again, as with the development of a potential regional water system, the ability of a regional Fulton County wastewater service provider to implement a SMART growth plan will depend to some extent on the organizational structure of the regional provider. A structure consisting of coordinated inter-municipal agreements would likely place a higher reliance on individual municipalities to plan for and develop future capacities and infrastructure where a Special District or Authority structure would likely provide a better ability to implement SMART growth plans.

5.3.1 Existing Municipal Wastewater Systems

There are three options available for negotiating with existing municipalities to obtain wastewater capacity for a regional wastewater system:

1. Purchase excess wastewater capacity from an existing wastewater system
2. Purchase all or a portion of an existing wastewater system
3. Lease all or a portion of an existing wastewater system

As with water supply, there are several municipalities operating existing wastewater systems within and adjacent to Fulton County. The GJJWTF, the Villages of Broadalbin and Mayfield, the Town of Northampton, and the City of Amsterdam all maintain existing wastewater systems which could potentially service areas within Fulton County.



5.3.1.1 Purchase Excess Wastewater System Capacity

Gloversville-Johnstown Joint Wastewater Treatment Facility

As stated in Section 2.7, there currently exists excess treatment capacity at the GJJWTF. The facility is currently permitted to treat 10.1 mgd. The average daily flow for the facility in 2012 was 5.2 mgd leaving significant surplus treatment capacity in terms of average daily flow.

The facility's engineer indicates that the treatment facility could accommodate additional wastewater flows depending on the composition of the wastewater. Relatively significant quantities of residential flows could readily be accommodated; a thorough review of wastewater composition would be required for significant increases of industrial flows.

The Sear Brown 2002 report provided an analysis of the potential for the existing GJJWTF facility to receive additional residential flows. The report reviewed an extension of wastewater service into the Towns of Johnstown and Perth. Based on the population and average daily flows at the time, the Report concluded that the GJJWTF could accommodate the residential flow from all the households of Johnstown and Perth (3,789) with only a 0.57 mgd or 7% increase in average daily flow at the wastewater treatment facility. The average daily flow at the time was 7.3 mgd and was reported as 5.2 mgd in 2012, a decrease of over 2 mgd.

Fulton County should pursue the acquisition of excess treatment capacity from the GJJWTF. The purchase of excess capacity would require approval by the Joint Sewer Board, the City of Johnstown Common Council and the City of Gloversville Common Council.

There are numerous examples of shared wastewater treatment facilities with communities purchasing treatment capacity from regional facilities. The City of Amsterdam, for example, provides wastewater treatment for the neighboring municipalities of the Town of Amsterdam, the Town of Florida, the Village of Hagaman, and the Village of Fort Johnson. Typically each municipality would own and operate its own wastewater collection system conveying wastewater to the regional treatment facility. In addition, the City of Glens Falls sells excess capacity at its wastewater treatment facility to the Town of Queensbury in Warren County and the Town of Moreau in Saratoga County.

Village of Broadalbin

The Village of Broadalbin has some level of excess wastewater treatment capacity at its wastewater treatment facility. There are several design parameters which may control the ability to receive additional flows at the wastewater treatment facility.

While the ability of the Village of Broadalbin's wastewater treatment facility to receive additional flows may be relatively small compared with the City of Amsterdam or the GJJWTF,



as discussed in Section 4, at this point it is not possible to predict exactly where or how future land development will progress. A regional wastewater system should have as many options available for providing wastewater treatment. This will improve the ability to develop land. The Village of Broadalbin's wastewater treatment facility is located in the southwest area of the Village and could potentially receive flows from the Route 30 Vail Mills corridor with a relatively minor investment in new collection system infrastructure.

While there may only be a limited amount of excess capacity currently available at the existing plant, what is not known is whether the plant could be expanded. Fulton County should discuss with Village officials whether the Village has conducted an engineering evaluation to determine the maximum expansion capacity of this plant. If this has not been conducted, Fulton County should discuss with Village officials having such an engineering evaluation conducted.

City of Amsterdam

The City of Amsterdam owns and operates a wastewater treatment facility serving the population of the City of Amsterdam (approximately 18,000), portions of the adjoining Towns of Amsterdam and Florida and the Villages of Hagaman and Fort Johnson. The City's wastewater treatment facility is located along the Mohawk River just east of the City on Quist Road. The facility is permitted to treat flows of 10 mgd (20 mgd during wet weather conditions); average daily flow during 2012 was recorded as 8.3 mgd.

While it would appear that some wastewater treatment capacity remains in terms of average daily flows, the City reports that they are under a Department of Environmental Conservation (DEC) Consent Order related to excessive inflow and infiltration in the collection system. An extension of the City system to receive flows from Fulton County may require improvements within the existing collection system to reduce inflow and infiltration.

As noted above, the Town of Amsterdam maintains an inter-municipal agreement with the City of Amsterdam for wastewater treatment. The Town of Amsterdam maintains a sanitary sewer collection system along Route 30 to the border with Fulton County. The existing collection system infrastructure along Route 30 reportedly has limited capacity available to receive additional flows. An investigation into the capacity currently available and potential improvements necessary to develop additional capacity are recommended. Use of the Town of Amsterdam's collection system would require an inter-municipal agreement with the Town.

5.3.1.2 Purchase or Lease of Existing Facilities

Another option that may be available for advancing a regional Fulton County wastewater system could be the purchase or lease of an existing municipal wastewater system or systems. In southeastern Fulton County, the existing municipal wastewater systems most likely to



support land development include the Gloversville Johnstown Joint Wastewater Treatment Facility (GJJWTF) and the Village of Broadalbin wastewater treatment facility.

The purchase or leasing of existing facilities would require the approval of the municipality which owns the system. In the case of the GJJWTF this would require the GJJWTF Board, the City of Johnstown Common Council and the City of Gloversville Common Council; in the case of the Village of Broadalbin this would require approval of the Village Board.

There are a number of viable alternatives available with respect to operation and maintenance of the GJJWTF facilities under ownership or lease agreement with a regional Fulton County wastewater provider. Regardless of ownership of the GJJWTF a regional Fulton County wastewater provider could contract with the two Cities and/or the current GJJWTF Board to continue the current structure of operation and maintenance or re-structure operation and maintenance responsibilities under a new regional system provider.

With respect to the Village of Broadalbin wastewater system, operation and maintenance is currently conducted through a collaborative effort between the Village Department of Public Works (DPW) and an outside consultant. Village DPW personnel are responsible for operation and maintenance of the wastewater collection system and certain wastewater treatment plant operation and maintenance tasks. The outside consultant is responsible for overseeing plant operations with a certified wastewater treatment plant operator, performing routine treatment plant equipment maintenance, reporting to the New York State Department of Environmental Conservation, providing technical assistance and coordinating with the Village DPW on necessary work at the facility. Should Fulton County develop a regional wastewater system, consideration could be given to working with the Village to provide these services rather than an outside consultant.

5.3.2 New Wastewater Treatment Package Plant

While identifying and pursuing agreements with existing wastewater treatment facilities that could work with a regional Fulton County wastewater provider is necessary and prudent, depending on the exact location and nature of future land development it may not be practical to connect to any of the existing systems.

In this case, the regional wastewater system could construct one or more new packaged wastewater treatment plant. Careful consideration, beyond the scope of the report, would obviously need to be given to siting and financing this alternative.



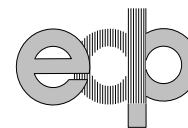
5.3.3 Fulton Montgomery Community College

An additional option potentially available to a regional Fulton County wastewater service provider may be the existing wastewater treatment facilities at the Fulton Montgomery Community College (FMCC). The ability of the existing facility to receive additional flows would certainly be limited when compared with the larger facilities of the GJJWTF or the City of Amsterdam; however, depending on the location and nature of a specific land development project, these existing facilities could be a reasonable alternative.

The FMCC wastewater treatment facility currently serves the FMCC campus and the HFM BOCES facility. The facility was constructed in 1967 with a permitted flow of 50,000 mgd. An engineering study in 2010 (Smith 2010) suggested that wastewater flows at the time were just over 18,000 gpd with anticipated flows of up to 26,000 gpd. The Smith 2010 study noted operational issues with the existing facility and recommended system upgrades necessary to overcome these issues. An additional study would be required to evaluate the effectiveness of the recommended upgrades, assuming they were implemented, and determine the ability of the current system to receive additional flows.

As with other examples provided throughout this section of the report, there are several options available for a regional Fulton County wastewater provider to utilize the existing wastewater treatment facilities owned by FMCC. These options include:

1. Purchase excess capacity at the wastewater treatment facility.
2. Purchase wastewater treatment facilities.
3. Lease wastewater treatment facilities.



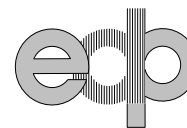
6. RECOMMENDATIONS

Based upon EDP's extensive assessment and evaluation of data on the existing water and wastewater delivery system in Fulton County, a comprehensive review of existing regional systems in New York State and understanding Fulton County's need for economic growth, EDP has concluded that **the development of a regional water and wastewater system in Fulton County is feasible.**

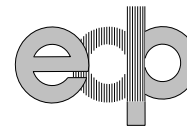
The development of this regional system can help promote land development and economic growth in Fulton County. EDP's research and analysis has resulted in the development of a series of recommendations it hereby offers to Fulton County.

GENERAL RECOMMENDATIONS FOR A REGIONAL MODEL:

1. Fulton County should pursue the model of developing a regional water and wastewater system using the existing Board of Supervisors' structure for administering and managing the system.
2. Fulton County should utilize County Special Districts to identify areas receiving water and wastewater services from the Regional System.
3. Fulton County should engage an engineering firm to prepare a SMART Infrastructure Growth Plan that identifies where future water and wastewater services should be provided in Fulton County and establishes basic infrastructure needs.
4. It does not appear to be economically feasible to extend water and wastewater infrastructure throughout Fulton County.
5. Fulton County should establish infrastructure funding mechanisms and establish County policies related to infrastructure improvements.
6. Fulton County should establish policies and standards for future water and wastewater infrastructure development.
7. Fulton County should apply for State and federal funding to implement water and wastewater infrastructure projects for regional systems.

**SPECIFIC REGIONAL WATER SYSTEM RECOMMENDATIONS:**

1. Fulton County should commence immediate discussions with existing municipalities regarding:
 - a. Their willingness to provide water capacities to a regional water system.
 - b. Their concerns and needs regarding their municipal water system.
 - c. Establishing wholesale rates for water capacities provided to a regional system.
2. Fulton County should develop multiple sources of water supply to promote and service future land development. Potential sources may include:
 - a. Excess capacities from existing municipal water supply systems within Fulton County.
 - b. New groundwater sources.
 - c. Excess water capacity from the City of Amsterdam.
 - d. Developing the Great Sacandaga Lake as a new surface supply.
3. Fulton County should engage an engineering firm to:
 - a. Evaluate the potential for developing groundwater wells at Tryon.
 - b. Evaluate the potential for developing groundwater wells outside the Tryon Facility in southeastern Fulton County.
 - c. Evaluate the feasibility and cost of developing the Great Sacandaga Lake as a new surface supply for a regional water system.
4. Fulton County should encourage and assist the City of Johnstown in securing additional water capacity by either:
 - a. Acquiring capacity from the City of Gloversville.
 - b. Securing additional surface reservoir capacity.
 - c. Developing new groundwater sources.
5. Fulton County should approach the City of Johnstown to discuss modifying the existing water supply agreement to reduce the rate at which water is purchased for Fulton County Water District No. 1.

**SPECIFIC REGIONAL WASTEWATER SYSTEM RECOMMENDATIONS:**

1. Fulton County should commence immediate discussions with the Cities of Gloversville and Johnstown and the Joint Sewer Board regarding:
 - a. The Cities and Joint Sewer Board's willingness to provide wastewater capacity at the Gloversville Johnstown Joint Wastewater Treatment Facility to a regional wastewater system.
 - b. Their concerns and needs regarding their wastewater collection and treatment systems.
2. Fulton County should commence immediate discussions with the Village of Broadalbin, Village of Mayfield and Town of Northampton regarding:
 - a. Their willingness to provide wastewater capacity to a regional wastewater system.
 - b. Their concerns and needs regarding their wastewater systems.
 - c. Their willingness for Fulton County to conduct an engineering evaluation of their wastewater treatment facilities to determine the feasibility for expanding existing facilities.
3. Fulton County should develop multiple potential sources of wastewater treatment capacity to promote future land development including:
 - a. Acquiring excess treatment capacity from the Gloversville Johnstown Joint Wastewater Treatment Facility.
 - b. Acquiring excess treatment capacities from the Village of Broadalbin, Village of Mayfield and Town of Northampton.
 - c. Acquiring excess treatment capacity from the City of Amsterdam.
 - d. Developing packaged wastewater treatment plants at strategic locations.
 - e. Developing a full wastewater treatment plant at a strategic location.
4. Fulton County should engage an engineering firm to:
 - a. Evaluate the feasibility of expanding existing wastewater treatment plans in the Villages of Broadalbin and Mayfield and Town of Northampton's.
 - b. Evaluate the feasibility of developing a wastewater collection system along the NYS Route 30 corridor from the Fulton / Montgomery County line north to Vails Mills.
 - c. Evaluate the feasibility of developing new full or packaged wastewater treatment facilities at strategic locations for service to a regional wastewater system.



6.1 General Recommendations for a Regional Model

6.1.1 Pursue the Model of Developing a Regional Water and Wastewater System Using the Existing Board of Supervisors Structure for Administering and Managing the System

EDP recommends the model that Fulton County develop a regional water and wastewater system under the existing structure of the Board of Supervisors for administering and managing the system. Advancing a regional water and wastewater system under the Administrative Structure of the existing County government may increase the size of County government. However, this would be an expected outcome resulting from providing a new municipal service. This Administrative Structure would afford the County flexibility in terms of working with existing municipalities to provide services and maximize administration and operation and maintenance efficiencies.

6.1.2 Fulton County should utilize County Special Districts to identify areas receiving water and wastewater services from the Regional System.

As Fulton County moves forward creating a regional system, Special Districts will need to be established identifying areas receiving water and wastewater services. While the regional water and wastewater system would be administered by Fulton County, these Special Districts could be established and administered at either the Town or County level of government.

EDP recommends that Special Districts be established at the County level of government. Special Districts will be most efficiently established and administered at the County level with the County able to provide continuity in the professional services necessary to perform these tasks and avoid any duplication of effort.

6.1.3 Fulton County should engage an engineering firm to prepare a SMART Infrastructure Growth Plan that identifies where future water and wastewater services should be provided in Fulton County and establishes basic infrastructure needs.

As the availability of water supply and wastewater treatment alternatives become clear, Fulton County should develop a SMART Infrastructure Growth Plan. The SMART Infrastructure Growth Plan would coordinate with local municipalities, identify where future water and wastewater services should be provided and establish basic infrastructure needs. Establishing and maintaining a SMART Infrastructure Growth Plan will be an important factor in assuring the long term success of a regional water and wastewater system.

6.1.4 Fulton County should establish infrastructure funding mechanisms and establish County policies related to infrastructure improvements.

The SMART Infrastructure Growth Plan should include consideration of future infrastructure costs and potential funding mechanisms to implement the plan. The potential funding



mechanisms will be important in terms of phasing infrastructure improvements over time. Funding of future infrastructure may be accomplished through a traditional funding process in which the County establishes a district and funds the necessary improvements to be financed over time by the property owners within the district or, depending on the progression of infrastructure and land development, the County could also consider a developer-funded model of new infrastructure financing.

Under a developer-funded model, the County's SMART Infrastructure Growth Plan, for development of a specific area, would include anticipated infrastructure needs, estimates of future infrastructure capital costs and estimates of future users. Based on these factors the County would establish connection charges that reflect infrastructure needs within different areas or future Special Districts of the County.

Initially, every new land development project would require new "common" infrastructure to extend water and/or wastewater services. As the County's infrastructure grows, some new land development projects would make use of existing infrastructure installed by others. If the development of a specific project requires the installation of new infrastructure the developer would undertake the construction, based on the County's SMART Infrastructure Growth Plan, and dedicate the completed infrastructure to the County. If the cost to construct the infrastructure is less than the established connection charges the developer would simply receive an infrastructure credit toward a portion of the connection charges and pay the balance. If the cost to construct the infrastructure is more than the established connection charges the developer would temporarily fund the difference. The County would establish a mechanism to reimburse the developer for financing infrastructure costs above that required, for the specific project, based on connection charges as future users connect to the system.

Should the County choose to advance infrastructure construction using the developer funded model, the County would need to establish a SMART Infrastructure Growth Plan considering the boundaries of future districts based on necessary infrastructure. However, formal districts would not actually be created until a specific property owner / land development project petitions the County to establish the district. The County would then include only that specific property / project in the district with the infrastructure funded as noted above. As additional property owners petition the County to be included within the district, they would install infrastructure or pay the established connection charges as noted above.

6.1.5 Fulton County should establish policies and standards for future water and wastewater infrastructure development.

As actual infrastructure begins to grow within the County it will become increasingly important to establish and maintain standards with respect to actual infrastructure (i.e., equipment, pipe etc.) and construction. EDP recommends that Fulton County establish infrastructure standards



to avoid different types of equipment within future systems to minimize operation and maintenance costs and to be able to develop inventories of spare parts. Construction standards should also be established to ensure proper installation and longevity of infrastructure and minimize operation and maintenance costs.

As discussed in the previous section, there are various funding mechanisms available to finance future infrastructure improvements. As development occurs, the progression is rarely in such a manner that allows for the methodical advance or building of infrastructure. Initial land development projects will likely encounter significant infrastructure development costs. The developers often incur these costs; however, without a plan or policy in place, high initial infrastructure costs may discourage development. The County should establish a plan and policies for funding future infrastructure as soon as possible in the development of a regional water and wastewater system.

EDP recommends that the County establish clear policies with respect to infrastructure growth in accordance with an established SMART Infrastructure Growth Plan. Without establishing and maintaining clear SMART Infrastructure Growth Plans and a policy to conform with these plans, future infrastructure within the County may be at risk of advancing in an uncoordinated fashion without adequate consideration for future growth. The extension of water and/or wastewater services to a specific land development project may only consider immediate needs rather than future goals.

6.1.6 Fulton County should apply for State and federal funding to implement water and wastewater infrastructure projects for regional systems.

There are funding opportunities potentially available to Fulton County related to both planning and infrastructure development assistance including:

1. Empire State Development – Economic Development Program
2. New York State Department of Environmental Conservation / Environmental Facilities Corporation – Engineering Planning Grant
3. New York State Department of State – Local Government Efficiency Grants
4. New York State Energy Research and Development Authority (NYSERDA) – Cleaner Greener Communities Part II
5. New York State Community Development Block Grant (CDBG) – Community Planning Grant

The preceding list represents a mix of programs that were previously available; the continuance of these programs in future years is not guaranteed. The potential funding opportunities identified above are all part of New York State's Consolidated Funding Application (CFA). Additional detail regarding each of these opportunities is provided below.



Median household income criteria is often used to evaluate the eligibility or ranking of grant applications from various communities. The structure under which a potential Fulton County regional water or wastewater system operates could impact eligibility for specific funding opportunities. That is, a large district encompassing several communities may exceed population and median household income thresholds for specific funding opportunities that may not be exceeded within smaller districts serving specific communities.

Empire State Development – Economic Development Program

- Eligible Uses
 - Economic Growth Investment, planning and feasibility studies. With respect to Fulton County's SMART Waters program the application would likely focus on developing water and wastewater services to promote economic development.
- In 2013 there was \$1 million set aside for strategic planning and feasibility studies that would appear to apply to Fulton County's SMART Waters initiative.
- Contact: Mohawk Valley Regional Council

New York State Department of Environmental Conservation / Environmental Facilities Corporation – Engineering Planning Grant

- Individual grants up to \$50,000; requires 20% match
- Median household income equal to or less than \$65,000
- Funding will not be provided for projects that do not lead to the restoration or protection of a surface water body. With respect to Fulton County's SMART Waters program, the application would likely focus on the development of municipal wastewater facilities to help protect existing surface water resources.
- Likely to be available in 2014

New York State Department of State – Local Government Efficiency Grants

- Up to \$200,000 available for planning; 50% match required.
- With respect to Fulton County's SMART Waters program the application would likely focus on the government efficiency benefits of a regional service provider for water and wastewater services.
- Contact: Kyle Wilber (518) 473-3355 kyle.wilber@dos.ny.gov
- Previously some funding has been offered outside the CFA funding cycle; however, going forward all funding is likely to be under the CFA process.

New York State Energy Research and Development Authority (NYSERDA) – Cleaner Greener Communities Part II

- NYSERDA anticipates 3 rounds of funding with a total of \$90 million available.
- Cleaner Greener Phase II provides funding toward regional projects that support the regional sustainability goals identified during the previous planning (Phase I) process.



- Mohawk Valley Regional Sustainability Plan (i.e., Phase 1 of the process) identified several goals to "Establish Watershed Planning" that apply to Fulton County's SMART Waters initiative. The goals include:
 - Identify local areas where the water supply may not meet future demands
 - Use hydrological boundaries instead of political boundaries
 - Encourage cooperation between communities and counties, which may require intergovernmental agreements

New York State Community Development Block Grant (CDBG) – Community Planning Grant

- The applicability to Fulton County SMART Waters program would likely involve a study to identify how communities in the region could work together to best meet the area's water supply and wastewater needs, identify opportunities to save money and streamline government operations.
- The CDBG program has reportedly not provided planning money in a recent years.
- Contact: Charlie Phillion, 518 474-2182



6.2 Specific Regional Water System Recommendations

6.2.1 Fulton County should commence immediate discussions with existing municipalities

EDP recommends that the County initiate cooperative dialog with existing municipalities that could provide capacities to a regional system to determine their interest in providing capacity to a regional system and identify their priorities and concerns. Common ground needs to be found whereby both the regional system and local municipalities can financially benefit by working together to provide excess capacities to a regional system. A component of these discussions must include the provision of excess capacities at wholesale rates.

If those involved are willing to set aside preconceived ideas and view the concept openly, there are undoubtedly ways, demonstrated throughout other regional systems, in which a regional system could benefit existing municipalities and promote land development in the County.

A successful regional County system must identify the needs of individual communities and establish a structure or system that benefits the communities involved. These benefits could be engineering in nature in the form of shared resources, financial in the form of tax sharing or the sale of surplus resources, or both.

It is not logical for municipalities to hold surplus capacity in reserve when they could bring in additional revenue selling to neighboring municipalities. Likewise, it is not logical for municipalities lacking capacity to expend valuable resources developing new sources when supplies could be available through cooperation.

Other regions around the State have overcome differences and worked through similar issues to develop systems that benefit the regional as a whole. Prior to the establishing a regional water system in Genesee County the relationship between the City of Batavia and the County was challenging. Genesee County sought to extend water services beyond the City to promote economic development. The City, having a reliable water system with surplus capacity, was concerned with losing potential tax base to the development of areas outside the City. After much negotiation the City and the County found a compromise that benefits both parties. Genesee County now pays the City of Batavia \$550,000 per year to lease the City's water filtration plant. The County then contracts back with the City of Batavia to continue the operation and maintenance of the water filtration plant. Additionally, the County and the City established a new sales tax distribution agreement increasing the City's share of the sales tax revenue distributed by the County.

Another example of a city concerned with loss of tax dollars to a neighboring town can be found between the City of Amsterdam and the Town of Florida. Upon agreeing to extend water and wastewater services to the Town of Florida, the City established a new tax sharing



agreement with the Town under which the City receives a percentage of future sales tax growth in the Town.

A critical component to developing a cost effective regional system, that obtains its water from municipal systems, is to purchase excess capacity at wholesale rates. EDP's research determined that wholesale rates are extended to most regional water systems. EDP's research also determined that charging wholesale rates to a regional system is feasible as the supplier of excess capacity would typically experience minimal additional cost with increased production, would not assume additional distribution system infrastructure operation and maintenance costs and would not assume additional administrative costs associated with new users. EDP recommends that Fulton County secure wholesale water supply and wastewater treatment rates when purchasing excess capacities for the regional water and/or wastewater system.

6.2.2 Fulton County should develop multiple sources of water supply to promote and service future land development.

The most cost effective and efficient approach to infrastructure development in a regional system would be to develop multiple sources of water supply. Establishing multiple water supply options at various locations will help to minimize infrastructure construction costs. As new land development projects are proposed, water services would be extended from the nearest, most cost effective source while continuing to plan for future needs. As infrastructure is constructed, the County should maintain an evolving SMART Infrastructure Growth Plan interconnecting future infrastructure when feasible.

6.2.3 Fulton County should engage an engineering firm to evaluate regional water system supply alternatives.

EDP believes one of Fulton County's the first steps in establishing regional water and wastewater systems should be to conduct a series of engineering tasks related to the feasibility and advanced planning of future water and wastewater sources and distribution / collection infrastructure. As previously noted, Fulton County has the ability to engage an engineering firm and initiate these tasks under the existing form of County Government with general county funds. Should the County establish future water and/or wastewater Special Districts, the individual Special Districts would be required to reimburse these general county funds on a proportional basis.



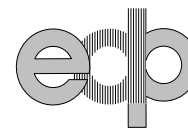
6.2.4 Fulton County should encourage and assist the City of Johnstown in securing additional water capacity.

As noted in Section 2, the City of Johnstown appears to be approaching a water demand that would require the development of additional water supply resources while the neighboring City of Gloversville maintains a water supply system operating at less than 50% of its capacity.

Both Gloversville and Johnstown could benefit from a cooperative approach to water supply; EDP recommends that Fulton County facilitate this relationship and provide some level of assurances and permanency to an agreement between the municipalities. Planning and developing regional water system infrastructure through which nearby municipalities work cooperatively to share resources and plan for future needs will be an important function of a regional system provider.

6.2.5 Fulton County should approach the City of Johnstown to discuss modifying the existing Water Supply Agreement to reduce the rate at which water is purchased for Fulton County Water District No. 1.

Fulton County has an Agreement in place to purchase water from the City of Johnstown for Fulton County Water District #1. The City of Johnstown sells water to the County at 2 times its retail rate which totals \$6.76 per 1000 gallons. As shown in Table 6-1, this rate is nearly three times higher than typical wholesale rates found in regional water system researched for this Report. As a result of selling water at 2 times its retail rate compared to a wholesale rate, the cost to purchase water in Fulton County Water District #1 is very high. EDP found that the rate charged to customers in Fulton County Water District #1 to be one of, if not, the highest rates found during research for this Report. This high retail rate precludes the practical extension of water service to additional users because of the expensive cost of water.

**Table 6-1: Comparison of Wholesale Water Rates within Regional Water Systems**

Regional System and Wholesale Source	Cost per 1000 gal	Percentage of Wholesale Supply	Weighted Average
Genesee County Regional Water System			
City of Batavia	\$2.10	58%	\$2.47
Monroe County Water Authority	\$2.12	23%	
Erie County Water Authority	\$4.00	19%	
Wilton Water & Sewer Authority			
Saratoga County Water Authority	\$2.10	100%	\$2.10
Wayne County Water & Sewer Authority			
Monroe County Water Authority	\$1.92	37%	\$2.05
Village of Newark	\$1.69	14%	
Other Sources	\$2.25	49%	
Renselaer County Water & Sewer Authority			
City of Troy	\$1.86	100%	\$1.86
Fulton County Water District #1			
City of Johnstown	\$6.76	100%	\$6.76

Fulton County should approach the City of Johnstown to discuss modifying the existing Water Supply Agreement to reduce the rate at which water is purchased.

6.3 Specific Regional Wastewater System Recommendations

6.3.1 Fulton County should commence immediate discussions with the Cities of Gloversville and Johnstown and the Joint Sewer Board

It is likely that the GJJWTF will provide a regional wastewater provider with the most cost effective means to treat significant quantities of wastewater that could be generated from a regional collection system. It is important to initiate discussions with the involved entities (i.e., Cities of Gloversville and Johnstown and the Joint Sewer Board) to understand their concerns and determine available options for treating wastewater from a regional provider at the GJJWTF.

6.3.2 Fulton County should commence immediate discussions with the Village of Broadalbin, Village of Mayfield and Town of Northampton

While the individual Village and Town systems are relatively small, an opportunity may exist to work cooperatively in some capacity with a regional service provider. It will be important to initiate discussions with these municipalities as soon as possible to understand their concerns and develop a strategy for advancing a regional wastewater system.



6.3.3 Fulton County should develop multiple potential sources of wastewater treatment capacity to promote future land development

As previously discussed, the most cost effective and efficient approach to infrastructure development in a regional system will be to develop multiple sources of water supply and wastewater treatment.

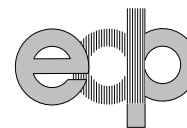
As with water supply development, establishing multiple wastewater treatment alternatives at various locations will help to minimize infrastructure construction costs. As new land development projects are proposed, wastewater services would be extended from the nearest, most cost effective source while continuing to plan for future needs.

6.3.4 Fulton County should engage an engineering firm to evaluate regional wastewater collection and treatment alternatives

The use of existing wastewater treatment facilities would provide a cost effective solution to extending wastewater treatment within certain areas of a regional system. EDP's review of the existing municipal wastewater treatment plants in the Village of Broadalbin, Village of Mayfield and Town of Northampton indicated limited excess capacities. Fulton County should engage an engineering firm to evaluate the potential for expanding these facilities. The evaluation would consider the treatment process, available land, collection system, and discharge limitations as they relate to possible expansion.

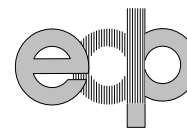
The NYS Route 30 corridor from the Fulton / Montgomery County line to Vails Mills is central to the region of Fulton County most likely to realize new land development. Fulton County should focus on this corridor during preparation of SMART Growth Infrastructure plans.

Depending on the location and size of future land development in Fulton County, the most cost effective solution to wastewater treatment may be through the development of a new package wastewater treatment plant. Fulton County should engage an engineering firm to evaluate the feasibility, cost and potential siting of a new package wastewater treatment plants.



LIST OF SYMBOLS & ABBREVIATIONS

BOD₅ – biochemical oxygen demand
CCWSA – Cayuga County Water and Sewer Authority
cfs – cubic feet per second
CF – cubic foot
DCW&WA – Dutchess County Water and Wastewater Authority
DEC – New York State Department of Environmental Conservation
DPW – Department of Public Works
EDU – Equivalent Domestic Unit
ECWA – Erie County Water Authority
FCWD#1 – Fulton County Water District No. 1
FMCC – Fulton Montgomery Community College
GBWC – Gloversville Board of Water Commissioners
GCRWS – Genesee County Regional Water System
GJJSB – Gloversville Johnstown Joint Sewer Board
GJJSC – Gloversville Johnstown Joint Sewer Contract
GJJWTF – Gloversville Johnstown Joint Wastewater Treatment Facility
gpd – gallons per day
JSB – Joint Sewer Board
lb – pound
lb/day – pound per day
LCWSA – Livingston County Water and Sewer Authority
LF – linear feet
MCWA – Monroe County Water Authority
mgd – million gallons per day
mg/l – milligrams per liter
ml/l – milliliters per liter
NYSDEC – New York State Department of Environmental Conservation
O & M – Operation and Maintenance
PARIS – Public Authorities Reporting Information System
RCW&SA – Rensselaer County Water and Sewer Authority
SPDES – State Pollutant Discharge Elimination System
Sq. Mi. – Square Miles
SS – suspended solids
TKN – total kjeldahl nitrogen
WCW&SA – Wayne County Water and Sewer Authority
MVWA – Mohawk Valley Water Authority
WWSA – Town of Wilton Water and Sewer Authority
WWTP – Wastewater Treatment Plant

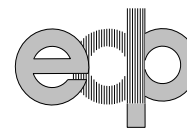


DEFINITIONS

Outside User – For the purposes of this report an "outside user" is a water or wastewater customer outside the municipal boundary of the municipality supplying the service. The term "outside user" is also used to describe a water or wastewater customer located outside the defined service boundary of a water or wastewater system.

Safe Yield (groundwater supply) – The 2012 Edition of the Recommended Standards for Water Works by the Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers (applicable New York State Standard) requires that the total developed groundwater source capacity, unless otherwise specified by the reviewing authority, shall equal or exceed the design maximum day demand with the largest producing well out of service.

Safe Yield (surface supply) – The 2012 Edition of the Recommended Standards for Water Works by the Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers (applicable New York State Standard) requires that the quantity of water at the source be adequate to meet the maximum projected water demand of the service area as shown by calculations based on a one in fifty year drought or the extreme drought of record, and should include consideration of multiple year droughts. Requirements for flows downstream of the intake shall comply with requirements of the appropriate reviewing authority. This source requirement is referred to herein as the Reservoir Safe Yield and is a parameter that is typically reviewed and approved by the New York State Department of Health at the time of water supply approval.



REFERENCES

Dunn 1971. "Ground-water Resources of Fulton County, New York", James R. Dunn & Associates, Inc., October 15, 1971.

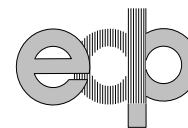
Sear-Brown 2002. "Fulton County Water and Sewer Study", Sear Brown, 2002.

Smith 2010. "FMCC Wastewater Facilities Capacity Study", Steven E. Smith Civil & Architectural Engineering, April 2010.

Stearns & Wheler 1991. "Engineering Report and Basis of Design - Water Filtration Plant, City of Johnstown, New York", Stearns & Wheler, October 1991.

Water Supply 10 State Standards. "Recommended Standards for Water Works 2012 Edition", Policies for the Review and Approval of Plans and Specifications for Public Water Supplies, Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, Health Education Services, Albany, NY.

Wastewater 10 State Standards. "Recommended Standards for Wastewater Facilities 2004 Edition", Policies for the Design, Review, and Approval of Plans and Specifications for Wastewater Collection and Treatment Facilities, Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, Health Education Services, Albany, NY.



LIST OF APPENDICES

APPENDIX A – PAST AND PRESENT CONTRACTUAL AGREEMENTS PERTAINING TO FULTON COUNTY MUNICIPALITIES

1. 1982 Agreement between the Gloversville Board of Water Commissioners (GBWC) and the Town of Johnstown by which the GBWC supplies water to limited areas within the Town of Johnstown.
2. 1981 Agreement between the Gloversville Board of Water Commissioners (GBWC) and the City of Johnstown by which the GBWC agreed to supply approximately 500,000 gallons per day to the City of Johnstown.
3. 2003 Agreement between the Village of Broadalbin and the Town of Mayfield for permission to own and maintain water infrastructure within the Town.
4. 2008 Agreement (amended 5/19/2009 and 9/10/20012) between the Village of Broadalbin and the Town of Broadalbin by which the Village of Broadalbin provides water to a limited area within the Town of Broadalbin.
5. 2013 Agreement between the Village of Broadalbin and John M. McDonald Engineering, P.C., by which McDonald Engineering provides services related to the operation of the Village Wastewater Treatment Facility.
6. 1964 Agreement and available amendments between the Cities of Gloversville and Johnstown related to the Gloversville Johnstown Joint Wastewater Treatment Facility.
7. 2004 Agreement between the City of Johnstown and Fulton County by which the City of Johnstown supplies the Fulton County Water District #1 with potable water.
8. 1976 Agreement between the City of Johnstown and the City of Gloversville by which the GJ-JWTF provides service to the Colonial Homesteads Sewer District in the Town of Johnstown.
9. 1988 Agreement of the Gloversville Johnstown Joint Sewer Board by which the Joint Sewer Board agrees to extend service to a Sewer District on the Extension of East Main Street.
10. 1990 Agreement by which the City of Johnstown agrees to allocate reserve wastewater capacity for service to the Aspen Hills Phase 1 subdivision located in the Town of Johnstown.
11. 1997 Inter-municipal Agreement between the Hudson River Black River Regulating District, the County of Fulton and the Village of Northville by which the Hudson River Black River Regulating District sells groundwater to the Village of Northville.



APPENDIX B – CONTRACTUAL AGREEMENTS PERTAINING TO MUNICIPALITIES OUTSIDE FULTON COUNTY

1. 2009 Agreement between the City of Amsterdam and the Town of Florida by which the City agrees to provide water and wastewater services to the Town and the Town agrees to a revenue sharing agreement with the City.
2. 2002 Agreement between the City of Amsterdam and the Town of Amsterdam by which the City agrees to provide potable water to the Town of Amsterdam.
3. 1999 Agreement between the City of Batavia and County of Genesee regarding regional water system cooperation and City / County tax sharing agreement.
4. 1995 Agreement between the Monroe County Water Authority and the Wayne County Water & Sewer Authority by which the Wayne County Water & Sewer Authority purchases water at wholesale from the Monroe County Water Authority.
5. 1997 Agreement between the Wayne County Water and Sewer Authority and the Board of the Town of Macedon Consolidated Water District by which the Wayne County Water and Sewer Authority will operate and maintain the water systems of the Towns of Macedon, Marion, Palmyra, Walworth and Arcadia.
6. 2002 Agreement between the City of Glens Falls and the Town of Queensbury by which the City provided excess wastewater treatment capacity to the Town of Queensbury.

APPENDIX C – DOCUMENTS RELATED TO PRIOR REGIONAL WATER AND WASTEWATER EFFORTS IN FULTON COUNTY

1. 1997 Fulton County Economic Development Strategy, Prepared by the Fulton County Planning Board.
2. 2001 Hiscock & Barclay Legal Opinion Regarding the ability for the City of Johnstown or the City of Gloversville to enter into an Agreement with a Town / Village or other Municipality within Fulton County to extend Water and Sewer Services into a Town.
3. 2001 Hiscock & Barclay Legal Opinion Regarding Whether a Master Agreement could be created between the Cities of Johnstown and Gloversville and other municipalities within Fulton County to establish prescribed rates, terms, and conditions for future extensions of water and sewer services.
4. 1990 Resolutions from the City of Johnstown Common Council, Town of Johnstown Town Board, and City of Johnstown Water Board supporting efforts to establish a regional water system.

APPENDIX D – SEAR BROWN ENGINEERING REPORT

1. 2002 Sear Brown Engineering Report entitled "Fulton County Water and Sewer Study", prepared for the Fulton County Board of Supervisors.